Impacts of imposed polychronic behaviour upon performance and well being in academic work environments.

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ABSTRACT

In the contemporary workplace individuals differ considerably in the manner they approach their work and achieve outcomes. This thesis examined the construct of polychronicity (preference for undertaking multiple tasks simultaneously) within two intellectually intensive academic work environments. The impacts of imposed polychronicity on performance, job satisfaction, perceived stress and wellbeing were explored. Data was collected from 116 lecturers, teachers, supervisors and managers working in Northern Queensland, Australia. A quantitative approach was taken to data collection. Existing scales were used to measure a range of variables including preferred polychronicity, experienced work unit polychronicity, organisational commitment, job satisfaction, and perceived stress. To provide a qualitative perspective, respondents were asked for comments which were used to add depth and breadth to the study. The findings indicated that preferred polychronicity and experienced work unit polychronicity did not differ over genders or occupations which suggests that polychronicity is likely to be a personal trait. Responses were divided into polychronic, neutral or monochronic preference categories. The findings indicated that when polychronicity was high organisational commitment was high, but when monochronicity was high organisational commitment was lower. Further the findings indicated that when organisational commitment was high, job satisfaction was high and when organisational commitment was low stress was high, although polychrons relationship with stress was lower than that of monochrons. This may suggest that polychrons work better in an imposed polychronic environment than monochrons which supports previous research. The implication for employers is that through understanding the tasking preferences of employees they may be able to tailor strategies to improve and enhance personal wellbeing which in turn may increase job satisfaction, performance, wellbeing and reduce turnover.

KEY WORDS

Polychronicity; job satisfaction; performance; time management; wellbeing.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

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CHAPTER I
INTRODUCTION

This chapter begins with an overview to the study including the background and context of the investigation. It details the concept of polychronic time use within organisations and how individuals relate to the concept. It outlines the participants, the research focus and the questions, the significance of the study and its limitations. The chapter concludes with an overview of the layout of the thesis.

Background

Time, and the manner in which humans manage it, has been of interest to researchers for centuries. In the workplace time has traditionally been viewed as linear with people working to schedules according to the clock. During the day tasks were generally organised so that they were achieved within a certain time span to meet a set schedule. However, as time went on, it appeared there were never enough hours in a day and managers tried to find ways to achieve higher outputs in any given workday. Edward T. Hall became interested in how individuals used their time undertaking his first scientific study in 1959. In 1983 Hall wrote about the construct of polychronicity which is concerned with how an individual chooses to undertake work, in particular the preference to work on two or more tasks simultaneously.

Polychronicity is commonly referred to as multi-tasking. However, the term multi-tasking does not fully explain the concept of polychronicity, which is related specifically to time use and is a core temporal dimension. Hall initially attributed polychronicity to the culture of a country or region. Culture relates to the rites, rituals, customs and norms displayed by a particular group of people (Trice & Beyer, 1984). Gradually Hall focused his research on polychronicity in organisational culture as he realised that the application to geographical cultural contexts was not as relevant as he had originally thought

(Bluedorn, 1998). By this time other research was also investigating polychronicity in workplace and industry cultural contexts (Thoms & Pinto, 1999; Bluedorn, Kalliath, Strube, & Martin, 1999).

Recent research has focused on investigating individual polychronicity in the workplace. The behaviours, preferences and attitudes of individuals towards carrying out tasks have been investigated in various work environments. This has resulted in the conclusion that polychronicity is more likely to be a fundamental personality trait than ephemeral or transitory (Slocombe & Bluedorn, 1999). Following on from these findings the most recent studies have explored polychronicity in relation to employee performance and wellbeing which is the focus of this study.

Research Problem

The key objective of this research was to investigate the relationships between the constructs of polychronicity, wellbeing and workplace performance. Specifically, it examined the impacts that arise from imposing the requirements for polychronic behaviour in academic workplaces. The study investigated whether managers' perception of stress of increased in a polychronic environment and whether the polychronic preferences of male and female managers differed. It is contended that through an increased understanding of the tasking preferences of managers organisations may be able to tap into their talent and use their creativity to increase organisational performance (Bluedorn, 1998). Improving job fit may help align personal preferences with organisational needs. This may in turn, increase job satisfaction and performance which would reduce intention to leave and thereby reduce employee turnover (Purcell, Kinnie, Swart, Rayton & Hutchinson, 2009). Increasing organisational performance increases the organisations ability to build a competitive advantage in its industry. To investigate these theories this study was conducted in Northern Queensland,

Australia. The population of interest was employees with management loads from two academic tertiary institutions.

Taking a construct oriented approach to analysing individual level polychronicity (Bluedorn et al., 1999; Conte, Rizzuto, & Steiner, 1999; Kaufman-Scarborough & Lindquist, 1999) this study measured a range of factors clustered into three groups of variables including; organisational commitment, job satisfaction and perceived stress. The study also measured the relationship between polychronic preference and gender and occupation. Five research questions guided the study:

1. Are female managers more likely to demonstrate polychronic behaviours than male managers?

2. Is polychronicity positively related with stress in situations where there is an imposed demand for polychronic behaviour?

3. Is monochronicity positively related with stress in situations where there is an imposed demand for polychronic behaviour?

4. Are polychrons less affected by stress than monochrons in situations where there is an imposed demand for polychronic behaviour?

5. Will matching the working environment to the individual's chronistic preferences impact positively on well being?

Significance of the topic

Research indicates that polychronicity is related to many important behaviours and attitudes of individuals (Bluedorn, Felker-Kaufman & Lane, 1992). A common theme has emerged positing the view of time as a source of differentiation and competitive advantage that is important to the success of

organisations (Palmer & Schoorman, 1999). Another common theme evolving relates to the importance of understanding employee needs for job satisfaction, a balanced lifestyle contributing to well being, and the effects of the work environment on job performance. Polychronicity has not been widely researched in relation to business management. However, in the majority, business and industry understand the importance of time management and its effect on performance (Purcell et al., 2009; Stone, 2005). Together these factors provide significance for researching the construct of polychronicity in relation to organisational behaviour, performance and wellbeing.

Research Approach

The instrument used to conduct the study was a composite of existing validated psychometric scales previously used by researchers to test polychronicity and variables associated with respondents' attitudes and feelings toward their work environment. Cronbach's Alpha reliability coefficient for the scales ranged from .65 to .88 with the majority over .70. This was considered an acceptable level for the current study (Tharenou, Donohue & Cooper, 2007). Scales included; preferred polychronicity (PrefPoly), experienced work unit polychronicity (ExpPoly), desire to remain a member of the organisation (MemOrg), belief in and acceptance of organisational goals (OrgGoals), willingness to exert effort on behalf of the organisation (OrgEffort), job satisfaction (JobSat), job enrichment (JobRich), negative job carryover (NegJob) and perceived stress (PerStress).

In total one hundred and twenty six individuals responded to the survey. However, only one hundred and sixteen responses were analysed. Although a quantitative approach was taken respondents were asked for comments which provided a qualitative perspective that added depth and breadth to the study. A range of statistical analyses including frequencies and means, t-tests,

correlation analyses and multiple regressions were conducted on the quantitative data.

Limitations of the Study

The study contained a number of limitations. These included:

1. The ability to extrapolate the results to the larger industry population was limited because only two academic organisations from one city were surveyed.

2. The size of the sample and the fact that it was a non random convenience sample also limited the ability to generalise the results to the larger population.

3. The limitation of time meant a full qualitative study could not be conducted to support the quantitative one. This would have strengthened the results by increasing reliability and validity.

4. There were a range of unmeasured variables that may have impacted upon the findings. Factors from outside of the organisation including home life and personal issues, and internal factors such as variations in work load from person to person, may impact on perceived stress.

5. Due to the limitation of time and the consideration that the study should not be too burdensome on participants this study did not measure performance.

Organisation of the Chapters

The thesis is organised into six chapters. Following this introduction Chapter Two presents a comprehensive review of the literature. The literature begins

by exploring the temporal dimension of polychronicity and the concept of culture. Next the construct of polychronicity is examined in relation to a range of cultural contexts. Polychronicity within organisational culture is explored within academic organisations and polychronicity as a retention strategy is discussed. The chapter then investigates research about the polychronic preferences of individuals. It explores the impacts that working in polychronic work environments may have on individuals in relation to organisational commitment, job satisfaction, perceived stress and wellbeing. Finally, the limitation of using students for research about organisational management is explored.

In Chapter Three the methodology is outlined. The research questions are introduced and the selection of participants discussed. A quantitative approach is taken for the study supported by qualitative comments from respondents that have been organised into three key themes that relate to the study. They are multi-tasking, organisational commitment and perceived stress. The chapter then outlines the approach to data collection through a self administered questionnaire. Existing scales chosen for the survey are discussed in relation to relevance, reliability, validity and ethical issues. Finally the approach for data analysis using a range of statistical methods, including frequencies, means, T-tests, ANOVA, correlation analyses and multiple regression is discussed.

The results are presented in Chapter Four. Firstly, the findings about preferred polychronicity in relation to occupation and gender are discussed, then preferred polychronicity and experienced work unit polychronicity. Within the discussion of results for preferred and experienced work unit polychronicity the findings for the variables are presented.

Chapter Five provides a discussion about the findings. It begins with job position and gender in relation to polychronicity and then moves on to the findings about the preferred polychronicity of individuals. Next, the impacts

from experienced work unit polychronicity are discussed in relation to the variables of organisational commitment, job satisfaction and perceived stress.

Chapter Six provides the conclusions and whether the hypotheses have been supported or rejected. This is followed by a range of recommendations for future research in the area of polychronicity in the workplace.

Summary

This chapter overviewed the study, and described the background context. It outlined the participants, research focus and questions, the significance of the study and its limitations. The chapter concluded with an overview of the organisation of the thesis. The following chapter is a comprehensive review of the literature about polychronicity, its connection with organisational culture and the workplace.

CHAPTER II
LITERATURE REVIEW

This chapter presents a view of the literature relating to the constructs of organisational culture and polychronicity within working environments. It begins with the conceptual framework upon which this study is based followed by a discussion of the construct of polychronicity. It outlines the construct of culture and examines the broader concept of polychronicity in relation to cultures across continents and nations, and then focuses on organisational culture. The discussion progresses to examine the use of time management in organisations and within the current business environment. Next the various chronistic behaviours of individuals in the workplace are investigated. The chapter then addresses personal characteristics and behaviours in relation to preferred chronistic behaviour including gender related polychronicity. The effect of workplace imposed polychronicity on job satisfaction, organisational fit, perceived stress, well being and performance is discussed. Finally, the review concludes with a discussion of the challenges for organisations and the recent developments in researching organisational culture and polychronicity.

Conceptual Framework

A construct oriented approach to analysing the impacts of individual level polychronicity has been adopted by researchers since the late 1980's (Bluedorn et al., 1999; Conte et al., 1999; Kaufman-Scarborough & Lindquist, 1999; Slocombe & Bluedorn, 1999). This theoretical framework has formed the basis of many studies in a range of countries, regions and industries and is the basis for the current study. A construct oriented approach examines the relationships between groups of closely related predictors and set criteria. In this study the criteria align with specific areas of performance. Establishing homogenous groups of predictors, people, work situations, and job behaviours enables predictions to be made for that group that may prove different from

those used for other categories of people and behaviours (Guion, 1991). Relationships between individuals' polychronic preferences and their actual behaviours have been compared to form conclusions about polychronic behaviour in the workplace.

A conceptual framework is built from research in an area of interest that has been added to over time. It describes the key issues and concepts the researchers are interested in and the relationships they expect to find between them (Maylor & Blackmon 2005). A range of constructs sit within the framework. A construct can be defined as a model, a concept, or a schematic idea that forms a theoretical hypothesis. Constructs are complex ideas that have been developed from the combination of simpler ideas. A construct is an experimental theory about an unobservable, underlying trait that is introduced to explain patterns of responses on an assessment (Gottfredson, 2005). The relevant constructs for empirical studies include units, treatments, observations and settings (Stone-Romero, 2008). Units in this study include the managers and organisations that are the subject of the study. The treatment is the method used to conduct the study and includes the decisions made to control and group the combination of variables measured. Observations are taken from the questionnaire measures and the setting is the academic workplaces studied.

The primary construct for this research is polychronicity, a temporal dimension of time, described as a cultural construct that involves different ways of organising activities (Hall 1983; Slocombe, 1999). The second construct of interest is organisational culture. Culture is a shared understanding of how life or work is conducted within a particular group of people (Trice & Beyer, 1984). This affects the way in which organisational members interact and decide how to carry out their work. The third major construct of interest is performance. Performance relates to the achievement or non achievement of work. It is the degree to which an individual is willing to carry out their tasks to achieve to the levels set by key performance

indicators and organisational targets (Stone, 2005). Finally the construct of competitive advantage of organisations underpins the study. Competitive advantage is created when an organisation develops a unique point of difference that enables it to succeed above other organisations (Porter, 1990). In this study, reflecting the current industry environment, the unique point of difference is positioning the organisation as an employer of choice to increase staff retention levels. This strategy recognises that experience and commitment impact on the level of customer service (increased satisfaction levels) in addition to ensuring a happier workforce (Stone, 2005).

Feelings, attitudes, values and behaviours are complex unobservable constructs (Tharenou et al., 2007). Factors such as these affect the way individuals use their time for completing tasks. The variables measured in the study included: preference for method of carrying out tasks (polychronicity), attitudes towards the organisation, feelings in relation to job satisfaction and job enrichment, performance behaviours (willingness to exert effort), feelings of wellbeing and perceived stress.

Early studies investigating polychronicity tested groups of variables that affected the way individuals used their time to complete tasks in the workplace. The results varied considerably for three major reasons. The first, researchers used different groups of variables in different settings. Second, sample populations varied from business students to employees' from specific industries. Third, both national and regional groupings were used. As a result the last two decades have seen a more systematic and structured approach being taken for investigations into polychronicity (Benabou, 1999; Bluedorn et al., 1999; Conte et al., 1999; Conte & Jacobs, 2003; Slocombe & Bluedorn, 1999). Psychometric measurement scales that have been developed to measure polychronicity in the workplace have been more focused with the aim to improve consistency across studies. Researchers have built on previous studies with a purposeful aim to provide a clearer understanding of the

correlates and potential impacts of polychronicity in relation to the workplace and employee behaviours.

This conceptual framework provides a useful approach to the study of polychronicity in terms of this research because a valid basis to test the hypotheses is already in place and has been well researched. It provides previous conclusions upon which comparisons can be made and ideas for future research promoted.

The Temporal Dimension of Polychronicity

Individuals' preferences for engaging in their work activities differ (Bluedorn et al., 1999; Hall, 1983; Kaufman-Scarborough, 2003; Kaufman-Scarborough & Lindquist, 1999; Lindquist, Knieling & Kaufman-Scarborough, 2001; Persing, 1999; Slocombe & Bluedorn, 1999). Some individuals prefer to work in a linear, sequenced manner, completing each task before beginning the next (monochronic approach) whilst others prefer to work on many things at once (polychronic approach).

This does not mean that polychronicity and monochronicity are two distinct concepts, since many individuals' preferences fall between the two extremes. Rather, they are opposite poles of a single concept (Benabou, 1999). Benabou's proposal concurs with Hall's thesis that there is a monochronic-polychronic continuum along which individuals may sit depending on the strength of their preferences (Bluedorn et al., 1992; Bluedorn et al., 1999; Hall, 1983). This construct relates the term 'polychronicity' to both monochronic and polychronic behaviour which clarifies much discussion on polychronicity that tends to relate to both ends of the monochronic-polychronic continuum. However, there has been debate that "the continuum view of polychronicity needs to be rethought and potentially recast as temporality" (Palmer & Schoorman, 1999, p. 337) as it offers only one perspective of time related behaviour patterns. It has been proposed that other

chronistic types, such as Type A Behaviour Patterns (TABP) or Time Urgent, exist beyond Hall's classification of polychronic and monochronic behaviours (Palmer & Schoorman, 1999). Regardless of the debate, no one construct has taken precedence nor been totally refuted.

Within any group of people there will be a mixture of behaviour preferences (e.g. monochrons and polychrons). Those who fall into the middle of the continuum (neutrals) may display either preference at varying times, although they are often categorised as either polychronic or monochronic (using a median split). In addition, individuals may display different preferences in different situations or while undertaking different activities. They may even differ in their polychronic behaviour during an activity (Manrai & Manrai, 1995). This is sometimes attributed to the culture to which they belong (Hall, 1983).

Polychronicity has been identified as one of the core temporal dimensions (Bluedorn et al., 1992; Bluedorn et al., 1999; Hall, 1983; Kaufman-Scarborough & Lindquist, 1999; Palmer & Schoorman, 1999). Temporality is the mental dimension of time within which time related behaviours of humans fit. Polychronicity sits within the construct of temporality. It attempts to explain the tasking preferences and behaviours of individuals.

The term 'polychronicity' was derived from the words 'poly' meaning *many* and 'chronos' meaning *of time*. Anthropologist Edward T. Hall was the first to use the term 'polychronic time use' in 1959 (Kaufman-Scarborough & Lindquist, 1999). The term referred to individuals carrying out two or more activities within the same block of time on a regular basis. Polychronicity is defined in this review as the preference to work on multiple tasks at one time, switching from one to another at will. In comparison monochronicity is defined as the preference to work on one task at a time through to completion before starting another. The term chronicity is used when discussing time use in general.

The construct of Polychronicity is of consequence because the use of time is related to many other important behaviours and attitudes of individuals (Bluedorn et al., 1992). For example, Hall's (1983) observations indicated that monochronic individuals tend to be task oriented, strictly adhering to appointments, seldom lending or borrowing property and maintaining short term relationships with people. In contrast, polychrons change plans frequently, borrow and lend, emphasise relationships rather than tasks and build long term relationships.

Understanding concepts such as these enables organisations to create a competitive advantage over other organisations by tailoring marketing and production of products and services to individuals needs (Kaufman-Scarborough & Lindquist, 1999). It also assists in adapting the work environment to improve efficiency and effectiveness, worker morale and reduce intention to leave (Bluedorn et al., 1992; Bluedorn, et al., 1999; Palmer & Schoorman, 1999). A common theme of the view of time as a source of differentiation and competitive advantage, that is important to the success of organisations, has emerged (Palmer & Schoorman, 1999). Each of the research streams emphasised a different aspect of time important to organisational success (Bluedorn & Denhardt, 1988). These aspects of temporality included the "organisational imperatives of globalization, communication, speed, cultural differences and time" which are tied together by the construct of polychronicity (Palmer & Schoorman, 1999, p. 324). It has been posited that time is a salient factor in organisational life which will continue to be used as an organisational resource well into the future (Bluedorn & Denhardt, 1988).

Over the past three decades the construct of polychronicity has been built through empirical research that explored the many aspects of temporal influences on workers. In fact, the concept of the temporal imagination was only recently introduced as a formal concept in the organisational sciences

(Bluedorn & Standifer, 2006). Through this research theorists have recognized the value of investigating the relationships between polychronicity and performance management. This body of work has been instrumental in progressing strategic approaches to organisational management (Bluedorn et al., 1999).

The Construct of Culture

The concept of differing polychronic preferences between individuals and between groups has been researched over the past three decades and related to various cultural factors (Bluedorn et al, 1999; Conte et al., 1999; Hall, 1983; Palmer & Schoorman, 1999; Tinsley, 1998). Culture is defined as a shared understanding of a way of life; the rites, rituals, customs and norms displayed by a particular group of people (Trice & Beyer, 1984). As culture is associated with values, attitudes and beliefs, it is often viewed as 'the way we do things around here'. Organisational cultures, for example, exist at a more superficial level of mental programming than the underpinning learning from family and social upbringing (Hofstede, 1993). Therefore, it is posited that individuals will adapt their beliefs to some limited extent to fit in with, and feel a part of, the culture with which they are attempting to associate.

Culture is a phenomenon which does not literally or physically exist and is not able to be directly observed, but is inferable from the way individuals speak and behave (Hofstede, 1993). It is the "collective programming of the mind which distinguishes one group or category of people from another" Hofstede, 1994, p. 89). Cultures are categories of people, which Hofstede says

> maybe a nation, a region or an ethnic group, women or men (gender culture), old or young (age or generation culture), a social class, a profession or occupation (occupational culture), a type of business, a work organization or part of it (organizational culture), or even a family (1994, p. 1).

Within cultures various sub cultures exist. For example, indigenous people live within the constraints of their national culture whilst retaining the values, attitudes and beliefs of their own tribe. People of various religions coexist within the nation whilst retaining their own beliefs. Culture is dynamic, evolving over time as people move in and out of groups, as nature and life demands change the needs of the group.

Forms of communication are often specific to cultural groups, whether it be different languages, industry jargon or non verbal forms of communication (Bluedorn, 1998; Trice & Beyer, 1984). There are shared meanings within conversations and understandings of the culture from past history. There is underlying knowledge of what is acceptable and what is not. Understanding the rules for communication within a culture enables the individual to develop an ability to communicate on the same level as other members of the group and to feel accepted (Trice & Beyer, 1984).

To become a part of the culture takes time. Hofstede (1994) noted several influences that affect national culture including; power distance (inequality), individualism (versus cohesiveness), masculinity (versus femininity), and uncertainty avoidance (preference for structure). These factors could be applied to most cultural groups. However, as the habits of a culture are collective, cultures can be slow to change. When there is a perceived need for a cultural change, strategies must be developed and agreed upon and it is known that many people tend to resist change, often preferring the status quo (Hofstede, 1994).

Studying and understanding organisational culture is important to advance knowledge in human resource management. However, as with national culture, studies of organisational culture have focused on specific dimensions rather than the overarching concept. This narrowness of focus does not take into account the influence of cultural factors upon each other. As the elements of organisational culture are interdependent on each other to varying degrees

it raises the question as to whether studying isolated elements produces distorted pictures which limit the understanding of the culture involved (Trice & Beyer, 1984).

Research on polychronicity has usually been within the confines of a culture, albeit national, regional or organisational. Anthropologist Edward T. Hall's research from the 1950's through to the 1980's focused on culture and within that the concept of polychronicity. His early findings led him to believe that the people in the cultures he studied shared similar polychronic preferences. Later researchers have built on his concept although as time has moved on both monochrons and polychrons are now found to coexist within cultures (Bluedorn et al., 1992; Bluedorn et al, 1999; Conte et al., 1999; Palmer & Schoorman, 1999).

Polychronicity and Culture

Hall (in Bluedorn, 1998) considered that his most important contribution to research was identifying the concept of the tacit dimensions of culture, including organisational cultures and the recognition of how immensely important the tacit dimensions are in shaping human behaviour. He noted that two to three times more meaning is tacit (implied) than explicitly expressed. The polychronic-monochronic continuum and proxemics of personal space is an example of implied meaning. Monochrons prefer a larger area of empty space around them than polychrons. When monochrons are put in the position of being too close to the person next to them they feel uncomfortable and tend to try to move away subtly, rather than saying something (Hall, in Bluedorn, 1998).

High and low context communication styles also fit within the polychronic-monochronic continuum (Bluedorn, 1998; Hall, 1983; Palmer & Schoorman, 1999). Context relates to the location of meaning in a message and lies within the form of transmission from one person to another (Palmer & Schoorman,

1999). In high context cultures, which tend to be polychronic, the message is in the implied meaning. This often requires a shared understanding of the communication process. Low context communication is explicitly expressed, therefore clear, which is how monochronic cultures tend to communicate (Bluedorn, 1998). While more information is transmitted in low context communication, more information is shared in high context communication (Hall, 1983). Manrai and Manrai (1995) concur with this belief commenting that high context cultures in developing countries such as Asia, Japan, the Middle East and South America have more intense communication patterns and tend to handle time in a more polychronic nature than the low context cultures of Western Europe.

Polychronicity as a Dimension of the Cultures of Nations

The people of different geographical regions (continents and/or nations) may exhibit similar chronistic tendencies within their domain which differ significantly from those of other countries or continents. Cultures develop over time. For example, when America was settled there was no established culture (apart from the native Indians who were not accepted as a part of early American society). The early settlement of America was dominated by Europeans from countries with monochronic cultures such as England, Germany and Scandinavia. Polychronic cultured migrants from countries such as Italy did not arrive until much later by which time American society had developed into a monochronic culture (Hall in Bluedorn, 1998).

In contrast other countries adopted polychronic cultures. In eastern cultures, markets bustle with polychronic activity (Hall, 1983). Government ministries meet with groups of people in public reception areas rather than offices, moving from group to group, whereas western cultures tend to schedule everything in their social and business lives. Hall proposed that Eastern cultures fit clearly into the realm of high context cultures where people are committed to building lasting relationships and time is viewed as intangible

and flexible. Hall (1983, p. 47) stated that “matters in a polychronic culture seem in a constant state of flux. Nothing is solid or firm, particularly plans for the future; even important plans may be changed right up to the minute of execution”.

While Hall witnessed a fairly stark dichotomy between polychronic and monochronic behaviour in his 1959 study, other forces may be at work in the modern environment that mean the dimensions diverge from the classic clusters he observed (Palmer & Schoorman, 1999). It is no longer relevant to consider entire national cultures as monochronic or polychronic due to globalisation and other contemporary factors. Life and its pace are changing over time making the direction of force difficult to gauge because the forces promoting change are pulling in opposite directions (Hall, in Bluedorn, 1998). Some members of American society desire a lower context culture and others a higher context culture which has always existed to some extent, according to Hall, through subcultures such as African and Native Americans. A more contemporary example of globalisation is where members of polychronic cultures are migrating and intermingling with more monochronic cultures. These groups then develop into sub cultures that are more polychronic (Bluedorn, 1998).

Other examples used to indicate polychronic and monochronic national cultures and behaviours include American students being more polychronic than Japanese students (Lindquist et al., 2001). Tinsley (1988) found that Americans were more polychronic than Japanese and Germans (who did not differ from each other). Tinsley based her understanding of Americans on management literature by two authors (Pascale, 1990 and Peters, 1993 in Tinsley, 1988) who described American managers as having a harried multi-task life, which is a polychronic characteristic. These findings conflict with the studies of Hall (1983), Platt (1994, in Conte et al., 1999) and Conte et al. (1999) who all describe Americans as being monochronic. Hall (1983), and Platt (1994, in Conte et al., 1999) found that the French who display

polychronic tendencies find it hard to work with Americans and Germans who are described as being monochronic.

The conflict of these observations leads to the suggestion it is more likely in the 21st century, that although influenced by national culture, polychronic culture is more specific to an organisation, industry or social group. This is probably due to the mixing of regional and national cultures over time (Hall, in Bluedorn, 1998). In addition, globalisation of industry is also bringing national cultures together (Manrai & Manrai, 1995).

Organisational Culture and Competitive Advantage

Several researchers have noted that culture differs over industries and within individual businesses (Bluedorn et al., 1992; Slocombe, 1999; Thoms & Pinto, 1999). Organisational culture impacts on every aspect of an organisation. A good culture impacts on the individuals within the organisation in the form of increased morale, organisational commitment, job satisfaction and intention to remain with the organisation (Duxbury & Higgins, 1991; Felker-Kaufman, Lane & Lindquist, 1991). From the organisations perspective a good culture impacts on performance, reduced turnover and gaining a competitive advantage over other organisations (Purcell et al., 2009).

Competitive advantage can be defined as creating a unique point of difference over other organisations that increases potential for success (Porter, 1990). To maintain or gain a competitive advantage organisations have adapted, implementing new management strategies and processes. Their learning has eventuated through studying both successful organisations and from academic research (Luna-Arocas & Camps, 2007; Purcell et al., 2009). To build competitive advantage organisations have increased speed in service and productivity which in turn has meant workplace cultures have also had to adapt (Whipp, Adam & Sabelis, 2002).

Research has indicated that organisational effectiveness comes from high levels of organisational commitment, job satisfaction and a willingness of workers to exert considerable effort on behalf of the organisation (Luna-Arocas & Camps, 2008; Purcell et al, 2009). This concept has been developed and built upon since the early 1980's by theorists such as Peters and Waterman (1982) and Porter (1990). A culture of shared norms and values emerged as core elements of successful organisational culture. Successful organisations have usually created a sustained competitive advantage through improved organisational processes and improved human resource management (Purcell et al., 2009). Other organisations want to know *how* the competitive advantage was attained and what the relationship is between people and performance in those organisations. Over time organisations have realised that imposing an organisational culture does not necessarily improve competitive advantage. Organisations must also realise the needs of the workers, especially in the 21st century as human resources become a scarce commodity (Stone, 2005). Perceptions of the practicalities of daily workplace practices should be shared and valued by all organisational members (Hofstede, 1993). This leads to 'person-organisational fit' where individuals will either adapt to fit or eventually leave (Purcell et al., 2009). The topic of person-organisational fit is discussed later in this chapter.

Polychronicity as a Dimension of Organisational Culture

Bluedorn et al. (1999) stated that polychronicity is one of the most basic temporal dimensions of organisational culture. They pointed to several studies in the 1990's that suggested the importance of studying polychronicity to improve the understanding of organisational activities and behaviours. The studies of polychronicity in the workplace began around the same time as management futurist theorists were realising that for organisations to continue to thrive they would need to anticipate the future and consider new paradigms as far as management was concerned (Jones, 1993; Tucker, 1991). It was

contended that by documenting past and present trends the future could be predicted and possible routes that organisations need to take to succeed in the 21st century mapped out (Tucker, 1991). Tucker predicted ten driving forces that would impact on organisations including businesses learning to benefit from lifestyle changes, whole businesses built around speed, and customers prepared to pay for speed.

There is a positive correlation between polychronicity and speed. An organisational culture supporting both speed of decision making and polychronic behaviours has a positive impact upon the organisation's performance (Onken, 1999). This demonstrates the use of organisational strategies to gain or retain competitive advantage in the contemporary business environment. The concept aligns with the notion that polychronicity ties together the organisational imperatives of globalization, communication, speed, cultural differences and time (Palmer & Schoorman, 1999).

As some organisations choose to implement more polychronic structures to gain a competitive advantage there is a need for managers to consider the impacts of change upon the workplace and employees. Whipp et al., discussed the identification of principles and processes of change along with accompanying paradoxes that demonstrate the way the system of temporal coordinates is changing over time saying

> First clock time as the dominant, naturalized temporal perspective is undermined by the results of its own logic. The problems of instantaneity, simultaneity, networked connections and temporal volatility have been super imposed on the linearity of clock time. And clock time in turn, we need to remember, had been overlain on the variable and contextual times of life and nature (2002, p. 21).

The second temporal coordinate to change was the level of time control and temporal reach, through inter penetration and mutual implication. Whipp et al. (2002, p. 22) noted that "all the historically established forms of temporal reach and control continue to coexist with the new increased and intensified levels in an often conflictual and paradoxical relation". They proposed that the third temporal coordinate to change was that of transmission technologies which now operate at the speed of light, this means speeding up is no longer an option and competitive advantage has to be achieved by other means.

Polychronicity as a Retention Strategy for the 21st Century

Moving into the 21st century other factors became influential in organisational success. High employment, along with global opportunities for employees are contributing factors to a shrinking employment pool in the current business environment. Globalisation has "spawned an increased war for talent" which leads employers to seek to develop effective retention strategies as employees exercise their ability to change positions and further their career (Nankervis, Compton & Baird, 2008, p. 541). Issues such as these are of crucial importance for managers in identifying the range of factors that influence employee satisfaction and turnover intention (Hsu & Wang, 2008). These issues drive employers to investigate strategies such as improving the work environment and working conditions.

Organisations are beginning to recognise that one of their key resources is their human capital and that it is a scarce commodity which should be valued to ensure employees remain with the organisation (Luna-Arocas & Camps, 2007; Purcell et al., 2009). In many organisations employees are finally no longer seen as an expense, but rather as strategic assets to be valued (Nankervis et al., 2008). The leading challenge for many organisations is staff retention. If managers fully understood which factors enabled employees to improve their performance and enjoyment of their work at the same time, and could ensure that each employee was able to work in a manner that facilitated

that, the organisation would become a workplace of choice (Kelliher & Anderson, 2008). In that situation employees would choose that workplace over others, the potential would exist for productivity to increase, profits to increase, and overall competitive advantage to increase.

The opportunities that arise from globalisation mean individuals can choose to further their career domestically, interstate or internationally (Nankervis et al, 2008; Stone, 2005). Within the highly competitive global environment employers aim to achieve maximum output using minimum resources to keep prices as low as possible, but labour costs in western countries are high.

Employers must ascertain more effective ways to increase performance while using fewer resources (Hosie, Sevastos & Cooper, 2006; Stone, 2005). To do this it has become necessary to introduce multi-tasking strategies (polychronic strategies) into the workplace. However, imposing tasking strategies that are alien to workers life habits and working modes does not always make for a happy workforce and accordingly job satisfaction levels and morale may drop (Arndt, Arnold, & Landry, 2006). It is contended that employees will be more productive and experience higher levels of job satisfaction and well being when their preferred time personalities are congruent with their actual time personalities (Hecht & Allen, 2003). This in turn increases intention to remain with the organisation.

Polychronicity, Flexible Work and Virtual Work Environments

New approaches to the management of working environments have evolved via new technologies such as videoconference, mobile video phones, web conference and email. Electronic technologies provide options for implementing new forms of time disciplines such as virtual work environments (Whipp et al., 2002). Virtual work environments provide opportunities for work to be undertaken outside the physical office. Work can

be conducted anywhere, at any time of the day or night and still be synchronised with the organisation, its clients and other stakeholders.

Global organisations often require their operations to be conducted asynchronously to bridge different time zones (Saunders, Van Slyke, & Vogel, 2004). Many employees need to be able to communicate across time horizons. Some organisations require employees to be more mobile moving from one location to another on a regular basis. This creates the necessity, in some situations, to implement the strategy of virtual work environments remote from the physical office, removing the concept of direct supervision, while increasing the need for more flexible working practices and behaviours (Golden & Veiga, 2008).

It is contended that flexible working practices are more suited to polychronically oriented workers who prefer to work on several activities at once. Saunders et al. (2004) posit that a focus on deadlines and schedules hampers polychronicity whereas a timeless vision allows a more holistic view of timelines. Lee and Leibenau (2002) also noted that conventional time disciplines may not be suitable for those working in the polychronic way in the range of virtual environments.

Concentration on single task (monochronic) work practices throughout the 20th century enabled workers to manage time effectively in task oriented environments (Whipp et al., 2002). In contrast, time disciplines in the management of virtual work environments require work teams and organisations to widen their vision and adapt to more flexible practices such as working outside of the standard 9am to 5pm range. For example, mobile phone's now enable instant access to email and provide ease of communication at any hour, from anywhere in the world, often with a visual component. Despite the popularity and widespread use of flexible working patterns, some managers still resist the use of flexible working modes retaining the belief that the rigid '9 to 5' time discipline is the best way to

control employees (Lee & Leibenau, 2002). One of the difficulties facing managers is how to control employees who work remotely or are not physically within their sight during the working day.

Virtual work arrangements have become a common method of working for more than 28 million employees in the United States (Golden & Veiga, 2008). Workers now combine working in the field or from home with periods in the traditional office environment. Originally this was used for clerical or home based workers but now many professional workers employ the mode. The virtual work mode was intended to enhance performance, satisfaction and commitment but that this claim is anecdotal and speculative with little empirical research conducted to support it according to Golden and Veiga (2008). They found that there are both organisational upsides and downsides to employing the virtual work mode. Those individuals who maintained a high level of communication with their supervisors in the study performed well while those who did not showed a significant reduction in commitment. This also related to job satisfaction and performance - the more intense the relationship with the supervisor, the higher the levels of job satisfaction and performance. Since it is contended that polychrons communicate more fluently and in a higher context manner than monochrons virtual work environments may suit them better (Palmer & Schoorman, 1999).

Academic organisations

Academic environments are 'intellectually intensive venues' (Persing, 1999) in which highly educated staff work to a common goal to provide education for the community. In Australia many are moving toward virtual work environments to accommodate the needs of students. The vast size of the country means many students are in remote areas. Many others work and study in their spare time. They require organisations to be flexible and available. This requires staff to travel, provide online learning, video conferencing, web conferencing and tele-conferencing in addition to

traditional face to face learning. Teachers work in communities, from home, in the classroom and in the office. Workloads have increased with academics now facing competing demands for their time and energy (Menzies & Newson, 2008). The nature of the work means that polychronic tasking is often imposed on staff. Teachers, lecturers, managers and front office staff must be available to students at all times whilst carrying out their day to day activities.

Many courses are offered online requiring teachers to join online forums and discussion boards at various times of the day or evening. These complexities also require a different form of planning the working day to the traditional. The involvement of people and the completion of projects and/or activities are more important than working to schedules. Academic environments are also built around a network of people working in a close knit system, as self managing teams. Organisational structure in academic organisations, although bureaucratic, is organic in which individuals form a part of the overall system, performing their work as a component of the whole (Onken, 1999).

Polychronicity and the Individual in the Workplace

Having considered the cultures of nations and organisations and within those cultural concepts, the dimension of polychronicity, this discussion progresses to investigate the individual's polychronic preferences and how they impact upon their working life. Slocombe and Bluedorn (1999, p. 76) state that "preferences for monochronic or polychronic behaviour seem more likely to be fundamental personality traits than ephemeral states". That would appear to mean that an individual is less likely to significantly change their personal polychronic preference to adapt to an organisation's culture. Research indicates that an individual will either adapt to the organisational culture or leave (Hsu & Wang, 2008; Purcell et al., 2009; Slocombe & Bluedorn, 1999; Wheeler, Coleman Gallagher, Brouer & Sablynski, 2007).

Cultural diversity has an impact when people or groups of people with different temporal perspectives interact. Their differences often cause conflicts to arise through misunderstandings. Therefore understanding the concept of temporal differences is important when working with culturally diverse groups (Bluedorn et al., 1992). Polychronicity in relation to both organisational culture and individual preference within that culture has an impact which needs to be considered (Slocombe, 1999).

Using the theory of reasoned action, Slocombe (1999) investigated the separate constructs of individual behaviours, beliefs and attitudes in relation to polychronicity. He considered the effect of available time on an individual's polychronicity and the difference between the individual's preference and the needs of the supervisor or manager for minor tasks to be completed at the same time as a major task. According to Slocombe, reasoned action assumes that individuals consider the consequences of acting monochronically or polychronically and prioritising tasks, taking into consideration the time available and the quality of the work required. Temporal uncertainty arises from differences in individual's time visions and unexpected complications that inevitably arise in the working environment (Saunders et al., 2004).

Individual's perceptions of time vary significantly across sets of time dimensions depending whether they see time as linear (monochronic) or homogenous (polychronic). Some will set time in blocks whereas others will work haphazardly across time to achieve their objectives. A monochronic approach including scheduling and synchronization can minimise temporal uncertainty by specifying start and end points. Although time visions can not easily be changed, they can be managed by a range of strategies which may include creating an awareness of the time horizon differences between individuals (or even between management and individuals) and facilitating the development of team norms amongst others (Saunders et al., 2004). A greater congruence between an organisational member's polychronic preference and

that of their work unit will be associated with higher levels of the constructs relevant to organisational behaviour (Slocombe & Bluedorn, 1999). For example, successful project managers have been found to be polychronic which is essential when working to project deadlines and activities that are polychronic by nature (Thoms & Pinto, 1999).

Monochronic and polychronic styles may result in different levels of effectiveness in various workplace situations (Kaufman-Scarborough & Lindquist, 1999). Therefore understanding the differences will enable organisations to ensure they seek the right mix of employees to fit their needs. In Kaufman-Scarborough's (2003) study polychrons felt they were more likely to reach their daily goals than monochrons did while monochrons reported they found it harder to organise tasks than polychrons. Further to that polychrons reported they worked better under pressure than monochrons. Both polychronic and monochronic individuals are needed in the modern learning organisation. Polychrons are more compatible with variety, autonomy and availability, whereas monochrons are more compatible with planning, deadlines and coordination (Benabou, 1999).

Personal Characteristics and Behaviours

An individual's chronistic preferences will naturally impact upon their work life. Polychrons are proactive toward change and able to juggle things simultaneously, not needing the strict constraints of schedule (Kaufman-Scarborough & Lindquist, 1999). In contrast, "Monochrons are the people who are always too busy to listen, too busy to go to lunch, too busy to have "real" relationships. A monochron at his or her best lives, breathes, eats and sleeps on schedule" (Kaufman-Scarborough, 2003, p. 91). Polychrons are likely to be more relationship oriented than monochrons who tend more towards task orientation (Hall, 1983). Polychronic behaviour is more weighted toward involvement with people and completion of tasks rather than adherence to schedules (Onken, 1999). There are other temporal constructs

outside of polychronicity that also relate to the time behaviours of individuals in the workplace.

Time urgency and Type A behaviour patterns

Time urgency is another temporal construct that, although distinct from polychronicity is likely to be related in some aspects (Conte et al., 1999; Slocombe & Bluedorn, 1999). While time urgency relates how quickly work is done (speed), polychronicity is a preference to work on several tasks at one time (method) which does not necessarily equate to the urgency to meet a deadline although, deadlines are often the reason polychronic behaviour is used. In their 1999 study Conte et al. proposed that polychronicity would be positively correlated with time urgency, achievement striving and impatience/irritability which their findings supported. Time urgent individuals tend to develop multitasking strategies to achieve their goals. Ishizaka, Marshall and Conte (2001) pointed out this strategy could be highly relevant when performing tasks that require such behaviour. Some of Conte et al.'s (1999) findings such as polychrons not demonstrating a preference for a slower pace of life, or increasing productivity, conflicted with other studies (Hall, 1983; Levine, 1988, in Bluedorn et al., 1999) probably due to the fact that their study related the concept of polychronicity to very different measures. Conte et al.'s study related polychronicity to a time urgency dimension, whereas Hall's study related to the cultural dimensions pace of life. Levine's study related to clock accuracy and speed, but not specifically to pace of life measures.

The concept of Type A Behaviour Patterns (TABP) is yet another construct that fits within temporality. Initially monochronic and polychronic behaviours appear to fit Friedman and Rosenman's (1974) Type A Behaviour Patterns. Conte et al. (1999) noted that polychronicity is likely to be related to both achievement striving (AS) and impatience/irritability (II) which are classic Type A behaviours. The reasoning is that "achievement-oriented

individuals may attempt to multi-task in order to accomplish more goals in the same time" (Conte et al., 1999, p. 271). Thus they are driven to polychronic behaviour by their personality. Ishizaka et al. (2001) pointed out that Type A individuals tended to strive to achieve more in a shorter period of time than Type B individuals. In contrast, Type B Behaviours are described as the opposite of Type A and are generally patient, unambitious, even tempered, not affected by time urgency. So while some aspects of Type A behaviours fit the behaviours of polychronicity they can not all be said to fit, nor all Type B behaviours fit monochronicity. Although polychrons in Conte et al.,'s study were less organised than monochrons that did not indicate that they worked at a slower or faster pace or that their performance was any less or more than that of monochrons. What it did indicate is that there may be benefits to matching workers to task environments (Conte et al., 1999).

This concept of personality and time use points to the individual's perspective of the tangibility of time (defining tangible as definite and touchable and intangibility as elusive and untouchable). If monochronic time use is machine paced and tangible and polychronic time use is nature paced and intangible (Hall, 1983) then this suggests that monochrons may feel they maintain control over their work by scheduling and organising because if they don't they will run out of time. Whereas polychrons prefer to work around time, recognising deadlines but not needing set interim time spans to meet the deadline.

Palmer and Schoorman (1999) concluded that TABP could not be a measure of polychronicity as it indicates that TAPB individuals are polyphasic (doing many things at once) even though they are time urgent (tangible use of time) and low context communicators which does not correlate with Hall's (1983) definition of polychronic behaviour. They propose that context, time use preference (polyphasia) and time tangibility are not isomorphic which means they should be considered independent dimensions. Therefore, polychronicity should be viewed as an independent construct, in a more restrictive sense,

within the model of temporality (Palmer & Schoorman, 1999). It may be possible that Hall's classic monochron and polychron types represent 'natural' or 'harmonious' combinations of the three time-related constructs; time use preference, context and time tangibility. Further to that it could be said that deviations from these types (such as the TABP) represent unnatural combinations which may cause disharmony that leads to negative outcomes such as stress and increased risk of coronary diseases which have been observed in past research (Palmer & Schoorman, 1999).

Individual creativity

Individual creativity may be more related to polychronicity than monochronicity in creative workers. Persing (1999) posited that polychronicity is a required behaviour in organisations that require speed to market in rapidly changing environments (such as IT firms) where individuals stretch the working day both horizontally and vertically. Horizontally, in longer hours worked and vertically, by expanding the variety of activities, tasks and roles they undertake at the same time "leading to vertical loading, or "multiplexing" in the workplace vernacular" (p. 358).

Evidence also indicates a positive relationship between individual polychronicity and individual creativity (Bluedorn et al., 1999). However, research has found that when polychronic behaviours are forced upon these individuals their performance can be negatively affected (Persing, 1999). The research records workers intentions to cut back, due to concern about their families, health, and ability to maintain such onerous schedules long term. Between "research and anecdotal evidence of intellectual workers impatience with an increasingly polychronically demanding world, one could conclude, then, that most creative workers might be monochronic after all" (Persing, 1999, p. 359).

Polychronicity and Gender in the Workplace.

Many studies on polychronicity record the number of males and females studied but do not investigate whether there is a stronger preference demonstrated toward polychronic behaviour by one sex or the other. The studies that have been conducted on gender differences are often sparse and contradictory because of the unsuitability of the sample methods chosen (Duxbury & Higgins, 1991).

However, there is a small body of gender related polychronicity research in existence. Findings from several gender related studies suggested "that men and women are likely to differ in their perceptions of time usage patterns" (Manrai & Manrai, 1995). While conducting an anthropological study Hall (1983) noted that in western cultures men tended to be more task oriented (monochronic) whereas women's lives centred on relationships and networks (polychronic). He also noticed that women were higher context (more complex, expressive communicators) than men, which he categorised as a polychronic trait.

Since the introduction of equality policies, women in developed countries have joined the workforce for personal and professional reasons, in addition to financial needs to support their families. In their expanded roles incorporating both work and the home, women continue to demonstrate a more polychronic nature than men (Manrai & Manrai, 1995). Over time, as workers moved towards equality between the sexes, it was not fashionable to admit that women were more emotional and went about their work in different ways than men (Hall, in Bluedorn, 1998). It is posited that men and women also handle time conflicts in different manners (Duxbury & Higgins, 1991). These studies indicate that women are more polychronic than men in many aspects of time usage, from their entire approach to tasking, to the ways in which they communicate and interact with other people.

In contrast, research by Felker-Kaufman et al., (1991) indicated that although women were indeed higher context than men they did not differ on time use preference or time tangibility. Therefore, they concluded, polychronic time use was not positively correlated with gender. Palmer and Schoorman's (1999) study also concluded that women were higher context than men and they noted that earlier research affirmed this. They also contended that if the Monochronic-Polychronic Continuum model was true then one would expect women to be more polyphasic than men, as well as more time intangible, but previous research did not support this stand.

As gender is a significant social and cultural differentiator it may impact on how male and female academics "experience changes in the workplace, how they use online technologies and how this affects their sense of presence in time" according to Menzies and Newson (2008, p. 503). They found that women "show a high degree of adaptability to the more fragmented, demanding chaotic work environment" (p. 510) that an academic organisation imposes. It is possible that women's roles as caregivers in the home and heavy administration type roles in the workplace "may equip them well to be multi-taskers and well adapted generally to conditions of multiple unexpected demands" (p. 511). Previous research in the area of gender related polychronicity is very limited and each study has taken a different approach so findings across studies are inconsistent.

Job Satisfaction and Organisational Fit

Measuring job satisfaction and job enrichment is considered to be of value when investigating whether some individuals adapt well to their environment even though they may not be working in the mode they prefer. Organisations that concentrate their changes on internal work culture as well as standard human resource practices may achieve significant improvements in

operational and financial performance (Luna-Arocas & Camps, 2007; Purcell et al., 2009).

Both person and situation factors are joint determiners of an individual's behaviours and attitudes and therefore should be examined together (Ostroff, 1993). Ostroff's 1993 study found significant relationships between the measures of satisfaction, commitment, adjustment, turnover intent and absenteeism. She concluded that social issues and growth/achievement factors may be critical for enhancing satisfaction, adjustment and effectiveness of individuals in organisations. Developing a 'fit' or a 'match' between an individual and a situation may produce positive outcomes, whereas a 'mismatch' may produce negative outcomes. Choosing people that 'fit' may increase tenure and it is possible that fit may increase with tenure as individuals change or adapt to better 'fit' the organisation (Francis-Smythe & Robertson, 2003).

According to total quality management literature satisfied employees are highly motivated, have good work morale and work more effectively and efficiently. Understanding why dissatisfaction occurs, the expectations and requirements of employees and the directions needed to implement changes is essential for every organisation (Hsu & Wang, 2008). Job satisfaction mediates the relationship between working conditions and individual outcomes. From that higher retention of employees creates a stable and experienced labour force which drives down costs through reduced training expenditure, creates efficiency gains and increases revenue through customer satisfaction.

Organisations need to increase levels of job satisfaction and the intent to remain with the organisation as these relationships are influenced by the perception of job mobility (Wheeler et al., 2007). In the current situation of high employment and scarce human resource pools organisations need to identify strategies to retain valuable staff and ensure high levels of employee

satisfaction (Attridge, Herlihy & Maiden, 2005). The adverse effects of turnover include lower morale, more pressure on existing staff while new employees are found, increased costs for training and lower production during the training process. If, as indicated, increasing job satisfaction and improving organisational fit improves retention levels then organisations will benefit by taking the time to study employee needs and drivers (Attridge et al., 2005).

Since organisational fit and job satisfaction are factors that increase with tenure due to increased comfort levels with the job as the individual adapts, it is also worthwhile investigating the effects of misfit. Individuals in the workplace react differently to situations. Some display the effects of stress in certain situations where others do not. This is because individuals feel pressure when learning a new job, working in an area in which they do not feel comfortable, or in a manner that does not work for them. This may return negative results without showing there is a specific cause if satisfaction and fit are not tested (Bluedorn et al., 1992). Bluedorn et al. found that the closer an individual's preference score is to that of the organisation, the closer the fit or match in terms of polychronicity. Therefore when testing pressure of work and the effects of negative pressure which result in stress, it is logical to also test job satisfaction and organisational fit.

Measuring Perceived Stress, Wellbeing and Performance

Perceived stress, wellbeing and performance are elements that impact upon each other, although Hosie et al. (2006) say that researchers have erroneously assumed that job satisfaction is synonymous with wellbeing. There have been positive relationships observed between job satisfaction and performance but in the main they have been weak. The stronger relationships have been noted in higher complexity management jobs. Therefore strategic initiatives that enhance managers' affective wellbeing and job satisfaction levels could be one way of improving managerial performance. However, while increased wellbeing has positive impacts for the individual and the workplace,

diminished wellbeing can affect productivity for the organisation and result in stress related effects for individuals (Hosie et al., 2006).

Employee wellbeing has previously been studied in terms of job satisfaction and burnout and linked to job and life satisfaction, physical health and longevity, and job performance (Grant & Campbell, 2007; Hosie et al., 2006). Individuals who work in service organisations such as academic institutions provide frequent and intense interactions with customers. They are often affected by interpersonal stressors which may contribute to decreased wellbeing (Grant & Campbell, 2007). Workplace health and safety legislation imposes responsibility on employers to provide a safe work environment and in recent years this has been extended to include health and wellbeing (Purcell et al., 2009; Scott-Howman & Walls, 2003; Stranks, 2005). Large organisations must now provide 'Healthy Work Programmes' that identify and address 1) features of healthy work and 2) the workplace stressors that reduce workers ability to cope (Grant & Campbell, 2007).

Stress

Stress is a perceived environmental demand which threatens to exceed a worker's ability and resources (time) to do the job and so endangering well being. There is no consensus on the definition of the term stress. The concept of stress is encased in divergence of opinion and conceptual confusion according to Motowidlo (1986) who tested a range of forty five stressful events that he found caused "feelings of stress that led to depression which, in turn, caused decrements in interpersonal and cognitive/motivational aspects of job performance" (p. 618). Motowidlo's model termed stress as "an unpleasant emotional experience associated with the elements of fear, dread, anxiety, irritation, annoyance, anger, sadness, grief and depression" (p. 619).

Neither feelings of stress nor high levels of work pressure are necessarily harmful in moderation; in fact they can be beneficial (Hosie et al., 2006).

Positive stress may results in feelings of exhilaration toward meeting the challenge. However, ongoing stress and pressure wear down the individual's ability to manage long term. Feelings of distress may result in feelings of inadequacy, insecurity, helplessness and desperation which reduce personal health and the ability to perform over extended periods of time (Hosie et al., 2006).

To investigate perceived stress in the workplace the Person-Environment (P-E) approach was developed which became the most widely cited model in the field (Edwards & Cooper, 1990). The model views an individual's perception of stress as an outcome variable that measures the levels of stress experienced in relation to objective stressful events, coping processes, personality factors, etc (Cohen, Karmarck & Mermelstein, 1983). To a certain degree the impacts from stressful events are determined by the individual's perceptions of how stressful the events are. The Perceived Stress Scale (PSS) was another model developed by Cohen et al. (1983) to determine the degree to which people found their lives unpredictable, uncontrollable, and overloading as these three issues have been repeatedly found to be at the centre of stressful experiences. However, any study of workplace stress will have limitations as there are other factors in an individual's life that affect them and may impact upon the way they are feeling at any given time. For example, chronic stress from ongoing life circumstances, events happening with friends and family, expectations of future events and events not listed on the scale used (Cohen et al., 1983).

Conte et al. (1999) considered that the relationship between polychronicity and stress was small. When considered in conjunction with the findings of Slocombe and Bluedorn (1999) this suggests that while polychronicity may be related to important organisational outcomes it may be unrelated to negative health outcomes (such as stress related issues or other health problems). Although, it should be noted that Slocombe and Bluedorn (1999) did not actually investigate the concept of stress within their study they related stress

to the individual's congruence between preferred and experienced levels of polychronicity and organisational commitment. Conte et al. (1999) pointed out that the relationship between polychronicity and stress and other health outcomes had not been empirically tested prior to their study. As their study was conducted on undergraduate students this leaves the topic still untested on individuals in a working environment.

To date, there appears to be no empirical evidence about the relationships between stress and the different perspectives of polychronicity and monochronicity in the workplace. However, previous studies on polychronicity have found that individuals feel more time pressured when asked to work in the opposite manner to their chronistic preference (Conte et al., 1999; Kaufman-Scarborough & Lindquist, 1999; Madjar & Oldham, 2006; Slocombe & Bluedorn, 1999). The effects of time related pressures have been considered within previous stress related studies (Terluin, Van Rhenen, Schaufeli, & De Haan, 2004; Warr, 2006). Findings from the polychronicity studies indicated that polychrons can cope with doing many things at once; constant phone interruptions, people wanting their immediate attention, turning back to the previous task with ease as long as they are not overloaded with seemingly unreachable goals or targets (Felker-Kaufman et al., 1991). In contrast, monochrons feel frustrated working in such a manner and prefer to arrange interruptions such as email, phone and staff queries to be handled within a set time span each day. These studies also indicate that both monochrons and polychrons can achieve well and their goal congruence increases when left to work in their preferred manner.

Waller, Giambatista and Zellmer-Bruhn (1999, p. 245) say that research on polychronicity indicates that:

1. individuals working under an identical time-pressured situation may exhibit very different time oriented behaviours from one another
2. individual time-oriented behaviour can affect subsequent group timing and pacing; and

3. the timing and pacing of group activities can affect group outcomes.

Time urgency literature suggests that time-urgent individuals are more likely to voice concerns about time and timing (Conte et al. 1999; Slocombe & Bluedorn, 1999). Individuals who voice their feelings of work pressure may impose a negative impact upon the morale of the group. Finding answers to what causes pressure opens up avenues for coaching team members in coping mechanisms and/or strategies for organisational change to improve workflows and performance (Attridge et al., 2005). This raises the question as to whether individuals adopt polychronic time use as an alternative strategy to monochronic time use to alleviate time pressures. “Roles can place competing demands on available time, money, information, goods and skills creating a type of role conflict known as role overload” (Felker-Kaufman et al., 1991, p. 393). Kaufman et al. stated that the temporal aspect of role overload (e.g. having more to do than can be achieved in the given time period) leads the organisation to create strategies that enable both the organisation and its members to cope with the perceived time pressure, such as imposing polychronic requirements for doing several activities simultaneously.

Wellbeing

Regardless of chronistic preference, a well balanced approach to work is essential to well being and performance as it reduces propensity to stress. Wellbeing consists of three core components 1) subjective wellbeing, 2) workplace wellbeing and 3) psychological wellbeing. This model proposes that employee wellbeing should be an important factor for organisations as it is directly linked to employee performance and turnover (Page & Vella-Brodrick, 2009). Using a solid framework for understanding and measuring employee wellbeing may “foster a more integrated approach to assessing and optimizing employee wellbeing” (Page & Vella-Brodrick, 2009, p. 441). Past research on employee wellbeing has been limited because of its heavy

emphasis on employee job satisfaction to the exclusion of wellbeing factors (Page & Vella-Brodrick, 2009).

There is an increasing interest in health rather than illness which is advancing the concept of wellbeing (Attridge et al., 2005). Wellbeing relates to feelings of pleasure and enthusiasm, without extended periods of unhappiness, anxiety or depression (Warr, 1990). Warr pointed out that two major behavioural components associated with wellbeing were competence and aspiration. A competent person has the ability to deal with experienced difficulties, and has a mastery of the situation. Aspiration is having an interest in, and the ability to engage with the environment; the ability to set goals and make active efforts to achieve them. An individual with feelings of wellbeing therefore should be able to set and achieve goals, and feel at one with their workplace so perform to a desired level.

A manager's job, by nature, demands simultaneous attention to multiple tasks and interruptions to work (Hecht & Allen, 2003). Therefore if an individual prefers to structure time differently then they may react in different ways to these demands. Those who enjoy managerial jobs may be more polychronically oriented and it is possible that work has a positive impact on wellbeing when it is structured to match an individual's preferences (Hecht & Allen, 2003).

Performance

Work performance is considered to be a dependant variable of great interest to researchers. Since the early 1990's "there has been a resurgence in examining relationships between personality variables and job performance" (Conte & Jacobs, 2003). The goals and objectives of an organisation are measured in terms of performance which is easily observable and measurable according to set standards although work performance is a complex phenomenon which depends on numerous factors (Rhandhawa, 2007). Interrelationships between

performance and key variables such as job satisfaction, turnover intention and self efficacy can be compared. Randhawa found that work related variables such as job satisfaction; turnover intentions and job-specific self efficacy were directly relevant to performance.

Polychronicity is linked to performance and work outcomes in Felker-Kaufman et al.'s (1991) theory of time congruence. When work outcomes are linked with the use of polychronic behaviours it may suggest that individuals experience better wellbeing and are more productive "when their ideal (or preferred) time personalities are congruent with their actual (or experienced) time personalities" (Hecht & Allen (2003, p. 1). This theory concurs with Bluedorn et al.'s (1999) findings relating to organisational fit.

Warr (1990) measured well being and other aspects of mental health prior to Hecht and Allen's (2003) study although he did not relate it to polychronic demands on employees. Warr noted that a large number of measures for job related affective wellbeing had already been developed that could be used in research studies. He found that higher level occupations suffered both higher and lower levels of depression-enthusiasm and anxiety-contentment. He also found the length of the working week was unrelated to all aspects he investigated other than negative job carry over (taking home feelings of pressure and anxiety). Anxiety–contentment levels were found to be attached to high workload and uncertainty.

Several researchers have found a positive relationship between work involvement and work conflict which leads to stress, decreased productivity, low morale and turnover intentions (Duxbury & Higgins, 1991). While the relationship between polychronicity and performance has been examined, the results have been inconsistent (Hecht & Allen, 2005). Taylor, Locke, Lee and Gist's (1984) research showed a positive correlation between performance and polychronicity in academics in academic work environments. Individuals who used polychronic behaviour (working on several projects at a time)

demonstrated higher performance increasing both quantitative and qualitative productivity. Frei, Raciot and Travagline's (1999) study showed a positive correlation between monochrons and performance. In contrast Conte et al.'s (1999) study found polychronicity unrelated to performance. They noted a negative correlation when researching undergraduate students and the effect polychronicity had on their academic performance. This was consistent with Bluedorn and Denhardt's (1988) finding that polychronicity may be related to performance only in particular settings. Bluedorn and Denhardt (1988) reviewed a range of studies and found that the only time performance increased was in situations where deadlines were tight. Performance increased as the deadline approached.

More recently researchers have investigated the combination of polychronicity, the workplace environment and their effects on performance and wellbeing. Until Hecht and Allen's (2005) study, virtually no research had investigated the extent to which the workplace environment places polychronic demands on employees, the impacts of those demands against the employee's preferred working style, and whether the fit between these two factors is related to well being and performance. Hecht and Allen's (2003) study concluded that although demand for polychronic behaviour can be beneficial to the workplace, too large an amount or too small an amount will be associated with an individual's poorer wellbeing than when supplies are matched to the individual's values.

Limitations of Using Students for Research

Taking into consideration studies such as Conte et al. (1999), Taylor et al., (1984) and Tinsley (1988) amongst others, it would appear that research studies only measure certain dimensions of polychronicity which can lead to questionable outcomes when the data is generalised too widely. For example, the outcomes from some studies (Bluedorn & Denhardt, 1988; Taylor et al., 1984) seem to indicate that polychronicity may be related to certain variables

such as performance and stress only in particular settings (Conte et al., 1999). This makes it difficult to translate those findings back to an entire culture; nation, region or industry.

Much research predicting the chronistic tendencies of both continental and national cultures has generalised a whole culture using a small sample that is often not representative of the whole population or even the same type of population, but merely a representation of a specific student or industry population (Conte et al., 1999). There need to be many studies over a range of populations to ensure an accurate outcome that can be extrapolated over an entire culture, albeit region, nation or industry. For example, Conte et al. say that further research is needed in the area of cross-cultural hypotheses as in their study French women reported being less polychronic than men. Even though the sample was predominantly female (79%), this cannot be extrapolated to represent all women. The study states that the sample was drawn from undergraduate students, which creates dubious results when comparing research on student populations with that of individuals in working environments (Conte et al., 1999). Further research linking polychronicity with the various measures is required to ensure such disparate findings are resolved (Conte et al., 1999).

Summary

This chapter reviewed the literature relating to polychronicity, beginning with a broad look at the concept then focusing in on the various aspects of polychronicity and culture. Next organisational culture and competitive advantage were examined. Then polychronicity was explored as a dimension of organisational culture firstly as a retention strategy for the 21st century then in relation to flexible work and virtual work environments with an emphasis on academic work environments. Next the concept of polychronicity and the individual in the workplace was investigated followed by gender based polychronicity. Next the personal characteristics and behaviours of individuals along with the impacts of job satisfaction and organisational fit were explored.

The measurement of perceived stress, wellbeing and workplace performance was then discussed. The chapter concluded by noting the limitations of using students to investigate workplaces in relation to polychronicity and associated impacts.

The following chapter describes the research design used to survey a population of academic managerial employees' preferences and attitudes towards polychronicity. It sets the scene for the study outlining the research methods, selection of the participants, instrumentation, ethical stance, validity and reliability, data collection and finally data analysis. The construct of polychronicity will be investigated measuring associated impacts from the variables of gender, occupation, organisational commitment, job satisfaction, perceived stress and wellbeing.

CHAPTER III
RESEARCH METHOD

This chapter firstly outlines the key objectives of the study, followed by the research questions and then an outline of the research approach. The participants are identified and the procedures implemented to select participants are outlined. Next, the psychometric adequacy of the questionnaire design is discussed including measures employed and the sources of the scales used. Reliability and validity is then discussed and the ethical strategy outlined. Finally, the approach taken to collecting and analysing data is explained.

Research Questions

The purpose of this study was to investigate the relationships between individual polychronic preferences and the attitudes, feelings, actions and perceptions of teachers and managers in relation to their work environment. Specifically, it examined the impacts of imposed polychronic behaviour upon performance, stress and well being in academic workplaces. The study investigated whether perceived stress of managers increased in a polychronic environment and whether the polychronic preferences of male and female managers differed. The reasoning was that through understanding the tasking preferences of managers, organisations may be able to tap into their talent and use their creativity to increase organisational performance (Bluedorn, 1998). Matching the right person with the right job and allowing people to work in the manner they prefer may help align personal preferences with organisational needs (Purcell et al., 2009).

Five research questions guided the study:

1. Are female managers more likely to demonstrate polychronic behaviours than male managers?

2. Is polychronicity positively related with stress in situations where there is an imposed demand for polychronic behaviour?

3. Is monochronicity positively related with stress in situations where there is an imposed demand for polychronic behaviour?

4. Are polychrons less affected by stress than monochrons in situations where there is an imposed demand for polychronic behaviour?

5. Will matching the working environment to the individual's chronistic preferences impact positively on well being?

Question 1 aimed to investigate whether there are significant differences in polychronic preference between males and females in management positions. If there are differences then organisations may choose different strategies based on preferred behaviours. Questions 2 and 3 explored the relationship between polychronic preference and perceived stress in polychronic environments. Question 4 was designed to investigate whether polychrons adapt to a polychronic environment better than monochrons. If this is so it is anticipated that they will not perceive their stress levels to be as high as those of monochrons in a polychronic environment. The final question aimed to explore whether individuals working in their desired environment exhibited higher levels of wellbeing.

Research Approach

The construct of Polychronicity frames the research in terms of the constructs, development of the questionnaire and the approach to analysis and interpretation. Firstly, a set of research questions was developed to guide the research. Doing this ensured that a clear understanding of the purpose of the research was developed and determined the form the study would take. A

largely quantitative approach was taken for data collection. A questionnaire was used because it provided the opportunity to gather a large range of data that answered specific questions. It enabled the answers to be expressed numerically for the purpose of statistical analysis to investigate whether the results were empirically sound or whether they may have occurred by random chance (Maylor & Blackmon, 2005). This form of investigation included the ability to conduct objective observation and measurement, and accurate analysis of data. By using objective, valid and reliable methods it enabled the conditions to be controlled and the opportunity for the study to be repeated later with only slight variations. In addition, it was one of the quickest and most cost efficient ways of gathering data from large numbers of respondents in a short timeframe (Maylor & Blackmon, 2005; Zikmund, 2003). Sending out a self administered questionnaire distanced the researcher from the respondents minimising the possibility of personal bias.

Sometimes a strictly quantitative approach to management studies may present a narrow view which is restrictive on progress within the field (Coolican, 2004). Because different research methods can produce quite different findings (Patton, 2002), a comments section was added to provide balance by allowing respondents to expand on their answers. These qualitative comments added the opportunity to add depth and breadth to the survey results by providing a small insight into the contextual detail behind some of the relationships under investigation.

Selection of Participants

Convenience sampling was chosen for collection of data as it provided access to the full target population in a census manner. This increased the opportunity to survey a larger number of respondents. While it was recognised that this was taking an opportunistic approach to the study, choosing this mode of data collection did mean there was an increased opportunity for a larger response rate since self administered questionnaires

often attract lower response rates than interviews (Tharenou et al., 2007). This does bring an aspect of bias into the research as those who chose to participate may not be representative of the whole population. Respondents were volunteers who had their own reasons for responding, as did those who did not (Coolican, 2004). For example those who did not reply may have been too busy to do so, or felt it unimportant.

The sample population for this research was drawn from a body of teachers and lecturers who have management roles within their teaching role, along with administrative supervisors and managers working in two tertiary education institutions; Barrier Reef Institute of TAFE (BRIT) and James Cook University (JCU), in North Queensland, Australia. There were 126 respondents from which 116 responses were suitable for analysis. The sample was comprised of 69 female and 47 male respondents. The total population available was approximately 1,000 employees in the job categories desired. The recommended sample size for a population of 1,000 is 278 (Lunenburg & Irby, 2008). It was recognised that a low response rate may not return enough data to analyse or to provide reliable results because random sampling error can occur through chance variation. To reduce random sampling error it is important to have a reasonably large number of responses to give credibility to the study (Zikmund, 2003). Non response error was considered but as the data investigated was not heavily skewed to one perspective the data was considered to be of acceptable reliability. The 116 useable replies was deemed acceptable because this study was designed as social research to explore the feelings, attitudes and behaviours of a management population in a single industry area. There was no intention to extrapolate the results to the wider management population.

A letter requesting to survey employees was sent to the each of the organisations (Appendices A & B). The aim of surveying teachers with management responsibilities and other managers was to produce a sample that was representative of an Australian academic management population.

Choosing respondents from more than one institution meant that the group was relatively homogenous whilst demonstrating different organisational cultures. The strategic objectives of a university are different from those of a Vocational Education Training (VET) organisation such as BRIT. In addition the university system offers an academic approach to learning whilst the Technical and Further Education (TAFE) system focuses on offering applied learning which means respondents personal approach to their jobs may be significantly different from one institute to the other. Often there are also differences in workloads within organisations, from one person to another and from one department to another. These factors may impact upon job satisfaction, performance and perceived stress levels.

Questionnaire Design

A range of existing multi item measures was chosen for the questionnaire to measure the attitudes, values and beliefs of the respondents (Appendix C). Multi item scales are often used to measure complex unobservable constructs such as attitudes, values and beliefs since single item indicators are unlikely to capture the underlying constructs. Using multi-item scales to measure constructs increases internal reliability and consistency and decreases the level of measurement error (Tharenou et al., 2007).

As developing, testing and validating scales is time consuming, choosing existing uniform measuring techniques and instruments that have been widely used and validated, is a better choice (Maylor & Blackmon, 2005; Tharenou et al., 2007). There is a small range of multi item psychometric scales for polychronicity that have been widely tested for validity and reliability. These have been made available to other researchers to measure the construct of polychronicity and associated variables to ensure consistency in research findings in similar areas. Questions chosen needed to return the required data so that there was no necessity to request further data from respondents because of initial inadequate or irrelevant data collection (Booth, Colomb &

Williams, 1995). Therefore it was important to choose existing scales that suit the purpose of the study. A range of scales were considered including, the Polychronic–Monochronic Tendency Scale (Lindquist & Kaufman-Scarborough, 2007), the Inventory of Polychronic Values (Bluedorn et al., 1999) and the 7 Factor Scale (Slocombe & Bluedorn, 1999).

Five sets of items were chosen from Slocombe and Bluedorn's (1999) '7 Factor Scale' as they covered the measures of tendency well for the purposes of this research. The scale was developed to test hypotheses about the congruence between an individual's preferred polychronic behaviour and the polychronicity actually experienced due to workplace demands. The aim of using this set of interrelated constructs was to measure the feelings of respondents about various aspects of their work, their tasking preferences, organisational commitment and willingness to perform. The factor scales used were 1) Preferred Polychronicity, 2) Experienced Work Unit Polychronicity, 3) Desire to Remain a Member of the Organisation, 4) Belief in and Acceptance of Organisational Goals and 5) Willingness to Exert Effort on Behalf of the Organisation.

To determine job satisfaction and job enrichment measured against the individual's polychronic preference two scales developed by Luna-Arocas and Camps (2007) were used. To measure the constructs of wellbeing and perceived stress a further range of measures were required. To measure wellbeing a four item scale developed by Warr (1990) was used. It measured the effects of pressure of work on employees and the negative carry over to home life. To conclude the questionnaire a range of items relating to perceived stress in the workplace (Cohen et al., 1983) were used to test each individual's ability to adapt to workplace pressure.

The questionnaire began by asking respondents to identify their sex and job position type. Likert-type five point scales were used for the psychometric questions. They ranged from 1) strongly disagree to 5) strongly agree for the

polychronicity questions, job satisfaction and job enrichment questions. The questions about perceived stress ranged from 1) never to 5) very often. The Likert-type scale system was chosen to match the scales used in the surveys from which the questions originated. Interval scales such as these allow a stronger comparison than nominal scales while they still able to be coded back to numerals to provide statistical analysis (Maylor & Blackmon, 2005). In total fifty two questions were asked and a final request asked for comments which returned data about respondents reasons for answering in the manner they did.

Reliability and Validity

The scales used were chosen over others as they most closely fitted the purpose of the current study and enabled the measurement of the constructs previously identified. To ensure the retention of existing reliability and validity, scales were used in their entirety as modified items or instructions in multi item scales reduces the reliability and validity tested by the original researchers (Tharenou et al., 2007).

Testing was conducted for validity and reliability so that researchers should be able to obtain similar findings if the study is replicated at a later date (Maylor & Blackmon, 2005). Ensuring construct validity was also important because it ascertained that the instrument was really measuring the construct in question (Lunenburg & Irby, 2008). The results obtained in this study will not be extrapolated to the larger population or managers and teachers in general due to the non random convenience sample employed. This study would be able to be replicated in the future using the same strategy.

Internal reliability and validity of the scales was confirmed by the developers conducting a Confirmatory Factor Analysis (CFA) along with Cronbach's Alpha Coefficient to analyse multi item measures. The Cronbach Alpha reliability coefficient measured how strongly correlated each item was with

the other items in the scale and therefore shows consistency. The requirement for reliability for research purposes should be at least 0.70 and preferably higher (Tharenou et al., 2007). As existing scales were used, the Cronbach Alpha Coefficient conducted by the original researchers was accepted as reliable. The results are presented in Table 1 and have been summarised below.

Slocombe and Bluedorn's (1999) measures used in the current survey Preferred Polychronicity, Experienced Work Unit Polychronicity, Willingness to Exert Effort, Belief in Organisational Goals, and Desire to Remain in the Organisation were all above $r = >.70$ so were acceptable as reliable measures. It is considered that small scales (2 or 3 items) may not provide internal consistency reliability (Tharenou et al., 2007). However, Luna Arocas and Camps (2007) Job Satisfaction scale (2 items) and the Job Enrichment scale (3 items) were used to add depth to the findings as this study was not being used to determine significance levels that would be extrapolated to a larger population. Luna Arocas and Camps reasoning for using small scales was that by using a smaller although less reliable scale they expected to increase the volume of responses. Their CFA returned an overall coefficient alpha of 0.65 for Job Satisfaction and 0.83 for Job Enrichment. Therefore only Job Satisfaction presents below the acceptable reliability range of >.70. This was felt to be acceptable for the current study. Warr's (1990) scale of negative job carryover carried a coefficient alpha of 0.78. Cohen et al.'s (1983) Perceived Stress Scale (PSS) was tested using three samples over a period of time to ascertain reliability. The result was 0.84, 0.85 and 0.86 in each of the three samples. Therefore an average of the three has been used of 0.85. Reliability for this scale was also found to be acceptable.

Table 1

Factor Structure Summary for Scales

Scale	Factor
Preferred Polychronicity	0.85
Experienced Work Unit Polychronicity	0.83
Desire to Remain a Member of the Organisation	0.88
Belief in and Acceptance of Organisational Goals	0.84
Willingness to Exert Effort on Behalf of the Organisation	0.75
Job Satisfaction	0.65
Job Enrichment	0.83
Negative Job Carryover	0.78
Perceived Stress	0.85

r = *>.70*

Ethical Issues

To ensure respondents and the participating organisations were not adversely affected in any way by the study ethical issues were considered. This included factors such as consent, deception, debriefing, withdrawal from the study, confidentiality, and protection of all parties from harm (Coolican, 2004). The following actions were taken. An information sheet was provided to all potential respondents attached to the email request for participation (Appendix D). As some of the questions were of a sensitive nature they may have given rise to respondents' fear of identification even though they knew it was an anonymous survey. For these reasons respondents were given an opportunity to answer only questions they felt comfortable with and were assured of anonymity of both respondents and the organisations within the responses. They were informed that only aggregate responses would be used. This strategy minimised the risk of harm, and potentially increased the

response rate through ensuring respondents felt comfortable that their privacy was not being intruded upon as recommended in the Massey University Code of Ethical Conduct for Research.

All respondents were offered the opportunity to obtain a summary of the research upon completion by emailing a request to the researcher. In addition the participating organisations will be sent a summary of the research.

Data Collection

The survey was sent to the respective institutes and uploaded to their email system with a request from the organisation to support the survey (Appendix E). This meant that those who participated did so voluntarily without pressure or reward. An information sheet was included to ensure respondents enough information to make an informed decision about whether they wished to participate. A two week time frame was allowed for replies. A follow up request was then made to encourage further replies. The majority of the responses were submitted on the first day of the survey.

The data was collected using a commercial on-line survey software program called 'Survey Monkey'. The program allowed individual responses to be viewed so that the raw data could be transferred into an Excel spreadsheet. As a range of psychometric questions relating to respondents feelings were employed the responses were recoded into numerical data to enable more powerful statistics to be obtained and make results easier to understand. The first two questions were qualitative variables relating to gender and job type which returned nominal data (Maylor & Blackmon, 2005). The rest of the questionnaire returned ordinal data representing the variable as a number.

The survey instrument was pre-tested (Maylor & Blackmon, 2005). Cognitive testing was used to identify the correct group of respondents and to ensure questions utilised provided relevant useable data (Goldenberg, 1996). An

initial cognitive test was conducted for this study by asking a manager outside of the survey population to undertake the survey in the presence of the researcher and provide feedback. Following the respondent's feedback minor changes were made to the survey. Following the initial cognitive test, a pilot survey was conducted to ensure that any further problems with the questions, instructions and survey design were identified and rectified (Maylor & Blackmon, 2005). The pilot survey involved ten teachers and managers from outside of the potential survey population. The participants were asked to complete the survey and submit it. They were asked to email any comments for improvement if they noted any issues. Individuals chosen for cognitive testing were at the same organisational level and had similar knowledge to the population being sampled (Goldenberg, 1996). Cognitive testing also gave feedback on the way the test sample perceived and processed the information (Worchel, Cooper, Goethalis & Olsen, 2000). This enabled the questionnaire to be viewed from the perspective of the respondents to determine whether the population to be sampled would have the organisational knowledge, authority and capacity to understand the meaning of the questions. Difficulties encountered when filling out the questionnaire were identified and rectified.

The pilot study did identify some issues. Feedback included queries about the repetitive nature of some questions and some that seemed to contradict others in the same section. Acting on suggestions from the participants, small adjustments were made to the questionnaire. It was decided to randomise the questions so that the repetitive nature would not be so apparent rather than removing questions which would lessen the validity of the tests.

Data Analysis

A systematic approach was taken to analyse the data. Once the data had been collected it was checked to determine any errors in collecting or entering the data and then cleaned. Where there was no response for a question it was identified as 0 for data entry. Using a numerical coding process made data

entry quicker and potentially more accurate than using alpha coded data (Maylor & Blackmon, 2005). Once the data had been numerically coded it was then analysed using statistical tests in the Statistical Package for Social Science (SPSS). SPSS was used because it provides a more accurate result than using a standard spreadsheet when reporting on significance (Maylor & Blackmon, 2005). Using tests of statistical significance reduced the probability that the results were obtained from underlying relationships or differences between variables by exploring the likelihood that research findings had occurred by random chance (Maylor & Blackmon, 2005).

Parametric testing was chosen for data analysis as it enabled the characteristics of the sample to be tested. Parametric testing assumes that three conditions have been met; 1) the variable measured was normally distributed in the population, 2) the data represented an interval or ordinal scale and, 3) the selection of participants was independent (Lunenburg & Irby, 2008). In the current study the selection of participants was not independent as a non random convenience sample was used. Non parametric testing is advised when all three assumptions cannot be met. However, as parametric tests are generally more powerful in detecting significant differences between relationships they are often used even when the three assumptions are not met (Lunenburg & Irby, 2008). For these reasons parametric testing was used for this study taking into account the unreliability of non randomness. The results were used to make assumptions rather than relying on statistical significance.

A range of statistical analyses including frequencies and means, t-tests, correlation analyses and multiple regressions were conducted on the quantitative data. Conducting this range of analyses enabled the suitability of the data to be checked to see if it returned all the data required for interpretation (Tharenou et al, 2007). SPSS returned descriptive data along with frequencies and means which enabled comparisons to be made among the variables. This enabled some basic conclusions to be drawn and indicated that further tests using t-tests and correlation analyses would be worthwhile.

Firstly, polychronic preferences in relation to occupation and gender were investigated. Descriptive statistics showing frequencies and means were run along with a Levene's Test for Equality of Variances and an Independent Samples T-Test. Tests of Between-Subjects Effects were conducted to explore differences of individuals in relation to their occupations. The next sets of tests conducted were for preferred polychronicity and experienced work unit polychronicity. These were conducted on all respondents to ascertain their personal preferences prior to investigating the effects of a polychronic environment. Descriptive statistics were run showing frequencies and means.

The Likert Scale in the survey included a neutral option and this had been chosen often. This raised a concern as to whether running tests including answers from the neutral option would have an effect. To test this, the data was firstly split into two groups using the median of 3.2 (Monochron=<3.2; Polychron=>3.2). Frequencies and means were run, along with an Independent Samples T-Test and a Levene's Test for Equality of Variance. Next, frequencies and means, an Independent Samples T-Test and a Levene's Test for Equality of Variance were run for three groups (Monochrons, Neutrals, and Polychrons). To remove the uncertainty that arose from the respondents choosing the neutral option, their responses were removed. A grouping variable was created called Poly012 where; 0=Monochrons, 1=Neutral, and 2=Polychrons. Poly012 was used to test all the scales, comparing Poly012=0 with Poly012=2, cleaning the data removed the neutrals.

Further tests were conducted to test differences between the groups of variables against the three group option. The variable groups were:

1) Organisational commitment (OrgCommit) measured by MembOrg, OrgGoals, and OrgEffort;

2) Job satisfaction and enrichment (AllJobSat) measured by JobSat and JobRich;

3) Wellbeing (AllStress) measured by NegJob and PerStress.

Tests included frequencies and means, and Pearson *r* correlations in relationship to 1) all respondents, 2) monochrons and 3) polychrons. Next multiple regression was performed between monochronicity as the dependant variable and OrgCommit, AllJobSat and AllStress. Finally the comments were collated and analysed. Content analysis was used to theme the qualitative data into three areas 1) multi-tasking (polychronicity), 2) organisational values and commitment and 3) perceived stress. This involved searching for underlying themes within the comments that related to the hypotheses and the variables under investigation. By doing this the core content was able to be analysed to determine which data was significant (Patton, 2002). Interpretation of the results was more subjective, looking at the relationships between the variables.

Summary

This chapter described the methodological framework upon which the research was based. The chapter detailed the research questions, research approach, selection of participants, psychometric adequacy of the instrumentation, reliability and validity, ethical issues, and approach to data collection and analysis.

The following chapter will present the results from the study using the methods described in this chapter.

CHAPTER IV
RESULTS

This chapter describes the results obtained from the study. It commences with the results for preferred polychronicity (PrefPoly) and experienced work unit polychronicity (ExpPoly) in relation to polychronic preference between genders and occupations. This is followed by an analysis of the preferred polychronicity of individuals. The analysis of experienced work unit polychronicity investigates how individuals perceive their colleagues prefer to work. Next, relationships among the variables are investigated using correlational analyses. The groups of variables investigated are organisational commitment, job satisfaction and perceived stress. The chapter concludes with a summary of the qualitative comments collected during the survey.

Polychronic Preference in Relation to Occupation and Gender

Data gathered from the survey was collated to describe the population (Appendix F). There were 47 males and 69 females surveyed. The descriptive statistics showed the means for each sex were very similar for preferred polychronicity (F= 3.0283; M= 3.0255) and experienced work unit polychronicity (F= 3.6938; M= 3.6941). This indicated that there was more than likely no difference between males and females in relation to polychronic preference. To ascertain if this was correct an Independent Samples T-Test (Appendix F) was conducted to investigate whether there was a difference between the genders in relation to either preferred polychronicity or experienced work unit polychronicity. The T-test did not show any differences between the genders in relation to either preferred polychronicity or experienced work unit polychronicity. The Levene's Test for Equality of Variances confirms the homogeneity of the groups as the significance value is not <.05. This indicated that there did not appear to be any significant difference between the genders in relation to either PrefPoly or ExpPoly.

Tests of Between-Subjects Effects (Appendix G) were conducted to explore individual differences in 'preferred polychronicity' and 'experienced work unit polychronicity' of males and females in relation to their occupations. The tests also explored whether teachers and lecturers demonstrated different polychronic preferences to supervisors and managers. The results indicated that preferred polychronicity and experienced workplace polychronicity do not differ over sex/occupation combinations.

Preferred Polychronicity and Experienced Work Unit Polychronicity

Frequencies and means were run to explore preferred polychronicity of individuals and perceived polychronic expectations in the work unit. The frequencies showed that the answers for Preferred Polychronicity (PrefPoly) (Q 3-7) were spread across the five categories (Table 2). In questions three, six and seven responses fell more towards the ends of the continuum, whereas, the answers for questions four and five were more evenly spread. The responses in questions four and five may have been because respondents who were unsure chose the neutral option. 57.8% of respondents indicated that they did not like to juggle several activities at the same time which meant they fell into the monochronic end of the scale. 52.5% indicated that they usually worked on one project at a time when working alone which again fell into the monochronic end of the scale. When asked if they prefer to do one thing at a time the responses were placed towards the ends of the continuum with 41.4% agreeing and 48.3% disagreeing.

Table 2

Frequencies for Preferred Polychronicity

Q#	Question	Response	%
3	I like to juggle several activities at the same time	Strongly Agree	08.6
		Agree	26.7
		Neutral	06.9
		Disagree	43.1
		Strongly Disagree	14.7
4	I would rather complete an entire project each day than complete parts of several projects	Strongly Agree	01.7
		Agree	30.4
		Neutral	26.1
		Disagree	30.4
		Strongly Disagree	11.3
5	I believe people should do many things at once	Strongly Agree	07.8
		Agree	25.9
		Neutral	31.9
		Disagree	31.0
		Strongly Disagree	03.4
6	When I work by myself I usually work on one project at a time	Strongly Agree	10.3
		Agree	42.2
		Neutral	10.3
		Disagree	28.4
		Strongly Disagree	08.6
7	I prefer to do one thing at a time	Strongly Agree	06.9
		Agree	34.5
		Neutral	10.3
		Disagree	39.7
		Strongly Disagree	08.6

The frequencies for experienced work unit polychronicity indicated that most respondents felt that their manager wanted them to juggle several activities at the same time (82%) and that most people tried to do that (88%). Only 4% felt their manager preferred them to do one thing at a time. As with the answers to the preferred polychronicity questions, the similarity of results may have been because many respondents answered some questions choosing the neutral option.

To ascertain whether the neutral option was having an effect, the data was split and the frequencies and means were run for two groups (Monochrons and Polychrons) and three groups (Monochrons, Neutrals, and Polychrons).

Two Group Split Data Results

Using the median of 3.2 (Monochron=<3.2; Polychron=>3.2) the results showed no significant difference in any scale except for PrefPoly itself where polychrons scored higher mean scores (M=3.8, SD= .334) than monochrons (M=2.35, SD=.615) and the monochrons score was spread further from the mean (Appendix H). This indicated that polychrons demonstrate a stronger relationship with polychronicity than monochrons do with monochronicity The difference between means was significant, t (14.47) = 2.145, p<.05, two tailed (.000) (Appendix I). However, this data did not provide any more useable results than those from the initial tests run for the whole population. There was a concern that the neutral option was reducing the reliability of the results as their true preferences were not able to be ascertained.

Three Group Split Data Results

The results for three groups provided clearer information. Splitting the data into three equal groups showed that 33.3% of the sample were PrefPoly <2.8 and 33.3% of the sample were PrefPoly >3.6. This indicated that there were 37 monochrons and 44 polychrons. While polychronic preference was spread

fairly evenly over the length of the continuum (M=31%, N=30%, P=38%), polychrons scored higher mean scores for preferred polychronicity and experienced work unit polychronicity than monochrons. Polychrons produced higher mean scores (*M*=3.89, *SD*=.303) than monochrons (*M*=1.93, *SD* =.427) for PrePoly itself (Appendix J). The difference between means was significant, *t* (14.5) = 2.145, *p*<.05, two tailed (.000). The standard deviation shows that the polychrons were grouped tightly about the mean whereas monochrons were spread further from the mean. This indicates that polychrons demonstrate a stronger relationship with polychronicity than monochrons do with monochronicity.

Polychrons also produced higher mean scores (*M*=3.83, SD .516) than monochrons for ExpPoly (*M*=3.52, *SD*=.573). The difference between means was significant, *t* (5) = 2.571, *p*<.05, two tailed (.013). Here the means were more spread for both groups. This indicates that the relationship between polychrons and ExpPoly is stronger than that between monochrons and ExpPoly.

Perceived Stress, Wellbeing and Performance

Once the preferred polychronicity of respondents was established the effects of the variables were explored. The frequencies for the questions about stress asked to all respondents provided some interesting results. When asked whether they worry about job problems when they leave work 69% of respondents indicated they did. Many found it difficult to unwind at the end of a work day (59%). Exhaustion at the end of the day affected 60% and 67% felt quite used up at the end of the day.

Next tests were conducted to ascertain the differences in perceived stress and wellbeing of monochrons and polychrons. In the tests for two group split data results monochrons scored higher mean scores (*M*=3.09, *SD*=.669) than polychrons (*M*=2.81, *SD*=.479) for perceived stress (PerStress). The

difference between means was significant, t (14) = 2.145, p<.05, two tailed (.033). This indicates the relationship between monochrons and perceived stress is stronger than the relationship between polychrons and perceived stress. The results for the other variables showed that the mean scores for each variable set were similar and spread widely about the mean. This indicates no significant differences between monochrons and polychrons for the other variables.

Three Group Split Data Results for Three Groups of Variables

Tests on the three groups of variables showed the results more concisely than for the individual variables (Appendix J & K). In this instance the difference between means was significant only for OrgCommit. The means were widely spread for all three variables. The results of the T-Test for Independent Samples showed that for OrgCommit t (7) = 2.365, p<.05, two tailed (.044). This indicates that when polychronicity is high organisational commitment is high and when monochronicity is high, organisational commitment is low.

Correlation of Variables

Due to the three group option returning better data for the frequencies and means, tests were then run against the variables for the monochron and polychron groups. Pearson r Correlations were run for all of the variables (Appendix L & M). Some strong correlations among the variables were evident. The results showed that using the three groups of variables would not distort the results as they correlated similarly in the groups. MembOrg, OrgGoals and OrgEffort showed either all negative results, all positive results or no correlation when tested against a variable. JobSat and JobRich, JobNeg and PerStress also did the same. The correlations were then run for the three variable groups to provide better clarity (Table 3). The Pearson correlation between OrgCommit and AllJobSat was found to be significant with r(1) =.69, p<.01. The Pearson correlation between OrgCommit and AllStress was

also found to be significant with $r(1) = .33$, $p < .01$. These results suggest that when organisational commitment is high, job satisfaction is also high and when organisational commitment is low, stress is high. They also suggest that when job satisfaction is high, stress is low.

Table 3

Pearson r Correlations for all Respondents

		OrgCommit	AllJobSat	AllStress
OrgCommit	Pearson Correlation	1	.691**	-.329**
	Sig. (2- tailed)		.000	.000
	N	116	116	116
AllJobSat	Pearson Correlation	.691**	1	-.254**
	Sig. (2- tailed)	.000		.000
	N	116	116	116
AllStress	Pearson Correlation	-.329**	-.254**	1
	Sig. (2- tailed)	.000	.006	
	N	116	116	116

** Correlation is significant at the 0.01 level (2-tailed).

The correlations were run again splitting the monochrons and polychrons to see if they differed in their groups. The results showed the same overall result but the strengths of the relationships differed (Table 4). The Pearson correlation between OrgCommit and AllJobSat was found to be significant with $r(1) = .73$, $p < .01$. The Pearson correlation between OrgCommit and AllStress was also found to be significant with $r(1) = .39$, $p < .05$. These results indicate that for monochrons, when job satisfaction and organisational commitment are high, stress is low. These relationships are stronger than those of polychrons.

Table 4

Pearson r Correlations for Monochrons

		OrgCommit	AllJobSat	AllStress
OrgCommit	Pearson Correlation	1	.734**	-.395*
	Sig. (2- tailed)		.000	.016
	N	37	37	37
AllJobSat	Pearson Correlation	.734**	1	-.241
	Sig. (2- tailed)	.000		.151
	N	37	37	37
AllStress	Pearson Correlation	-.395*	-.241	1
	Sig. (2- tailed)	.016	.151	
	N	37	37	37

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

For polychrons the Pearson correlation between OrgCommit and AllJobSat was found to be significant with $r(1) = .66$, $p < .01$. There was no significant correlation with AllStress (Table 5). This indicates that for polychrons, when job satisfaction is high, organisational commitment is high but there is a weaker relationship with stress than that of monochrons.

Table 5

Pearson r Correlations for Polychrons

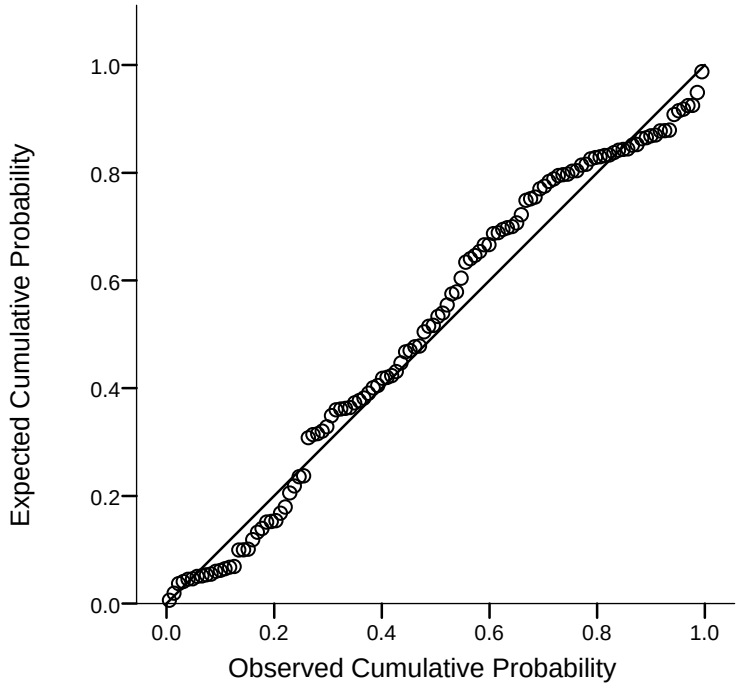
		OrgCommit	AllJobSat	AllStress
OrgCommit	Pearson Correlation	1	.662**	-.143
	Sig. (2- tailed)		.000	.354
	N	44	44	44
AllJobSat	Pearson Correlation	.662**	1	-.192
	Sig. (2- tailed)	.000		.213
	N	44	44	44
AllStress	Pearson Correlation	-.143	-.192	1
	Sig. (2- tailed)	.354	.213	
	N	44	44	44

** Correlation is significant at the 0.01 level (2-tailed).

Multiple Regression

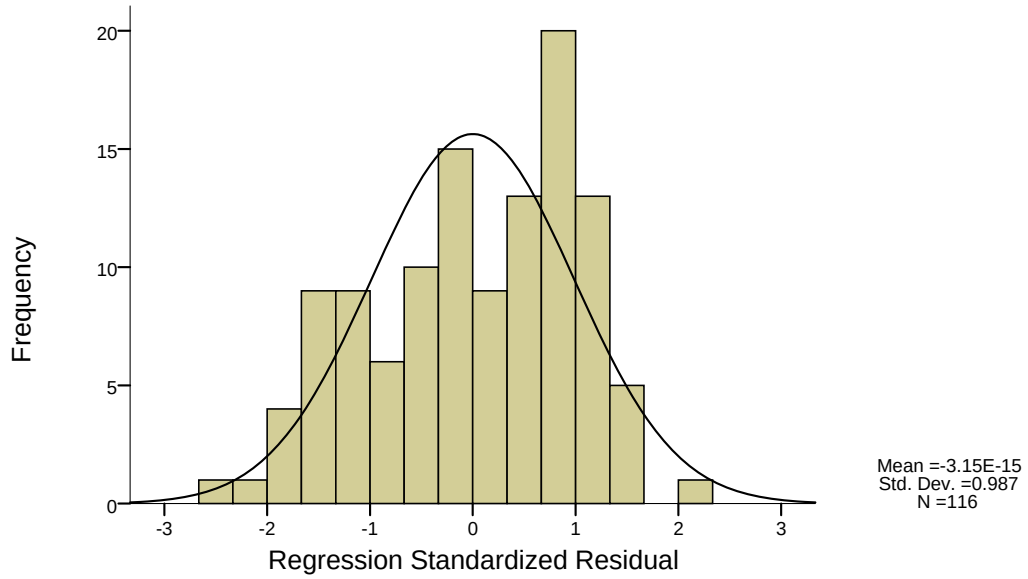
A standard multiple regression was performed between monochronicity as the dependant variable and OrgCommit, AllJobSat and AllStress as the independent variables. The Normal P-Plot Regression Standardised Residual shows the observed responses fall close to the expected regression line in a positive manner with no significant outliers which means they are normally distributed (Figure 1).

Figure 1. Normal P-Plot of regression standardised residual for preferred polychronicity



The Multiple Regression Histogram shows that the data is skewed to the right. This indicates higher levels of polychronicity for the variables (Figure 2).

Figure 2. Multiple regression histogram for preferred polychronicity



Multiple regression was conducted on the three groups of variables. The predictors included: (Constant), AllStress, AllJobSat, and OrgComit. The dependant variable was PrefPoly. Table 6 displays the correlations between variables, the unstandardised regression coefficients (β), the semi partial correlations and *R* (.292), *R* (.085) and R^2 adjusted (.061). *R* for regressions was significantly different from zero, $F_{3,112} = 3.484$, $p<.05$. The independent variable Org Commit (.257) contributed significantly to the prediction of preferred polychronicity, while AllJobSat (-.055) and AllStress (-.123) showed smaller negative results which were not significant (p>05). Variability (Adj R^2 in % form) in preferred polychronicity was predicted by the three independent variables. This confirms the previous tests which indicate that when polychronicity is high, organisational commitment is high.

Table 6

Multiple Regression of Variables

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.292	.085	.061	.84443

ANOVA

	Model	Sum of Squares	*df*	Mean Square	*f*	Sig.
1	Regression	7.631	3	2.544	3.484	.018
	Residual	81.766	112	.730		
	Total	89.397	115			

Coefficients

		Unstandardised Coefficient		Standardised Coefficients		
	Model	B	Std Error	Beta	*t*	Sig.
1	Constant	2.449	.790		3.099	.002
	Org Comit	.370	.184	.257	2.008	.047
	AllJobSat	-.073	.166	-.055	-.440	.661
	AllStress	-.169	.123	-.131	-1.370	.173

Comments from Respondents

A range of comments were received from respondents. In the majority comments were quite comprehensive and gave an insight into individuals' feelings about their work environment. To assist in interpreting the results the comments were sorted by gender, occupation and polychronic preference. Sixteen females and eight males responded. Seventeen of those people were polychrons (68%). There were 8 female teachers and 4 male teachers who were polychrons. There were 2 male managers, 1 male supervisor and 2 female supervisors who were polychrons. Each comment was able to be attributed to the respondent who made it using the raw survey data.

Table 7 shows the comments sorted by gender, occupation and polychronic preference. Polychronic preference was determined by adding the survey scores for the questions about polychronicity. The lowest score possible was 5 which indicated the extreme possibility for monochronicity. The highest score possible was 25 which indicated the extreme possibility for polychronicity. The scores for each question were obtained as follows: 1) strongly disagree, 2) disagree, 3) neither agree nor disagree, 4) agree and 5) strongly agree. 1 relates to the extreme monochronic end of the continuum and 5 to the extreme polychronic end. All scores below 10 were attributed to monochronic preference and all scores 11 or above were attributed to polychronic preference. Only one score from the respondents who made comments fell in the middle.

Table 7

Comments sorted by gender, occupation and polychronic preference.

#	Gender	Occupation	Q3	Q4	Q5	Q6	Q7	Total	Preference
1	Female	Teacher	3	4	3	4	4	18	Poly
2	Female	Supervisor	5	3	5	1	3	17	Poly
3	Female	Teacher	1	1	1	2	1	6	Mono
4	Female	Teacher	1	1	1	2	2	7	Mono
5	Female	Teacher	2	4	2	2	2	12	Poly
6	Male	Teacher	5	3	4	5	4	21	Poly
7	Male	Teacher	5	4	4	1	5	19	Poly
8	Female	Teacher	4	4	3	4	4	19	Poly
9	Female	Teacher	4	1	3	4	4	16	Poly
10	Female	Teacher	3	2	3	5	2	15	Poly
11	Female	Supervisor	4	4	4	4	4	20	Poly
12	Female	Teacher	3	3	3	3	2	14	Poly
13	Female	Teacher	1	1	1	1	1	5	Mono
14	Female	Teacher	1	1	2	2	1	7	Mono
15	Male	Supervisor	2	2	4	3	2	13	Poly
16	Male	Teacher	5	5	5	5	5	25	Poly
17	Female	Teacher	1	1	2	1	1	6	Mono
18	Female	Teacher	3	3	4	3	2	15	Poly
19	Male	Teacher	1	1	1	5	1	9	Mono
20	Male	Manager	1	1	2	3	4	11	Poly
21	Female	Teacher	5	4	4	4	4	21	Poly
22	Female	Teacher	1	4	1	2	2	10	Neutral
23	Male	Teacher	2	2	4	4	2	14	Poly
24	Male	Manager	2	3	1	3	2	11	Mono
Scale:			Min Mono = 5		Neutral =10			Max Poly = 25	

Comments were grouped into three themes; multi-tasking, organisational values and commitment and perceived stress.

Multi tasking

These comments indicated that the respondents acknowledge they are working in polychronic environments and that the polychronic environment is not necessarily of their choosing. The responses suggested that people feel that multi-tasking is becoming a way of life in many organisations as a necessity. One polychronic teacher commented "Everyone has to multitask because everyone is doing at least two, if not three, jobs. Multitasking is not a preference; it is essential in workplaces today". Another noted that "the necessity to multi-task is largely due to the nature of the job – often a single task cannot be completed before moving on – with results being interconnected and the decision to progress with one activity dependant on the availability of help from another person or equipment etc". It was also noted that many people feel that they must multi-task, because they are overwhelmed with work but that everyone else is in the same position- not only teaching institutions but hospitals, the police etc.

Organisational Values and Commitment

Some respondents felt that the stated organisational goals did not always match the values lived within the organisation. One individual stated "I am in agreement with the stated goals and values, but not with the true values, which are very different". Another noted that people care about their work and meeting client needs rather than the goals of the institution. Some felt that the organisation had not kept up with effective management and work practices which affected staff. Other comments for this section were dominated by respondents preparing to leave the organisation for various reasons. Some indicated that his may have coloured their responses.

Perceived Stress

This category elicited the majority of responses. Some negative responses tended to reflect personal feelings about interpersonal relationships at work that did not necessarily relate to the overall workplace environment. One respondent acknowledged that external influences such as family life and personal study have a big impact on the build up of stress. Another reflected that "Stress is good! I might only achieve 20% of what I want to, but it is good to have stretch goals!". This is contrasted by the majority who commented who felt they were being so stretched that it was affecting their performance. Comments included "Commitments keep arriving and I am becoming time sensitive", and "it frustrates me to have to cut corners and not do things as well as I would like to, just because of running out of time. I often choose a shorter night's sleep rather than leaving things undone that will blow up in my face….no matter how well organised you are, or how clever at time saving strategies, if there is more work and more work, then it still overwhelms all your best coping efforts". The comments reflected, in the majority, that the problem was recognised by management, but exacerbated by funding shortages. One individual commented that she was a "very good and dedicated lecturer who feels totally used up by the system".

Summary

This chapter described the results from the data analysis. First, the group statistics computed for 'preferred polychronicity' and 'preferred work unit polychronicity' were collated and summarised. This was followed by tests for polychronic differences between sex/occupation combinations. Preferred polychronicity and experienced work polychronicity were then explored. Next, the range of variables to be tested were arranged into three groups; OrgCommit, AllJobSat and AllStress and tests conducted for the full sample. The correlations were then run again for the three group option for the Monochron and Polychron groups.

The chapter concluded with a summary of the qualitative comments that were grouped into three themes; multitasking, organisational values and commitment and perceived stress. The following chapter interprets and discusses the results in relation to the literature review.

CHAPTER V
DISCUSSION

This chapter brings together the literature, data analysis and results presented in previous chapters. It expresses the overall proposition of the study. First, there is a discussion about the findings relating to differences in preferred polychronicity and preferred work unit polychronicity between the genders. Next preferred polychronicity and experienced work unit polychronicity are discussed followed by the relationships between polychronicity, perceived stress and wellbeing. Polychronicity as an organisational strategy is discussed. The chapter concludes with a short summary about the overall findings. The discussion is linked back to the literature reviewed for this study to ascertain reasons for anomalies and similarities between this study and past research.

Job Position, Gender and Polychronicity

The first research question asked whether female mangers were more likely to demonstrate polychronic behaviours than male managers. The results for the study found virtually no difference between the genders for either preferred polychronicity or experienced work unit polychronicity. The study also explored whether there was a difference between genders and occupations (Teachers/Lecturers or Managers/Supervisors). There was a weak relationship between males and females in relation to their occupations and preferred or experienced work unit polychronicity. The findings indicated that, for the respondents studied, preferred polychronicity and experienced workplace polychronicity do not differ over sex/occupation combinations. This finding suggests that monochronic or polychronic behaviour may tend to be specific to the individual, rather than to the occupation type or gender. These findings do not concur with past research that suggested females work polychronically while males work more monochronically (Hall, 1983; Manrai & Manrai, 1995; Palmer & Schoorman, 1999). The results do concur with the findings of Kaufman-Scarborough & Lindquist (1999) and also those of Slocombe and

Bluedorn (1999) who indicated the possibility that monochronic or polychronic preferences were "more likely to be fundamental personality traits than ephemeral states" (p. 76).

It may be possible that gender related polychronicity is more applicable to the home environment where historically the female has always needed to juggle the family needs with the running of the household. In the workplace all members need to juggle activities to achieve required outcomes. From whichever perspective one views it polychronicity appears to be an individual trait. These findings support those of Palmer and Schoorman (1999) who suggest there are no gender differences in relation to time use preference or time tangibility in work environments.

Preferred Polychronicity

To answer the second, third and fourth research questions that investigated the relationship between polychronicity and stress in an imposed polychronic environment it was necessary to first ascertain the preferred polychronicity of individuals. The findings for preferred polychronicity indicated that individual preferences appeared to be spread across the Likert scale ranging from 1) strongly disagree to 5) strongly agree. The results clearly displayed the effects of the Monochronic-Polychronic Continuum (Bluedorn et al, 1992; Bluedorn et al., 1999; Hall, 1983). They also align with the suggestion that preferences for the manner in which individuals engage in their work activities differ (Bluedorn et al., 1999; Hall, 1983; Kaufman-Scarborough, 2003; Kaufman-Scarborough & Lindquist, 1999; Lindquist et al., 2001; Persing, 1999; Slocombe & Bluedorn, 1999). The context of this discussion draws on the concept that individual polychronicity is the 'preference' to engage in several activities at one, rather than 'needing' to, or actually performing several activities at once (Persing, 1999).

In the study polychrons demonstrated a stronger relationship with polychronicity than monochrons did with monochronicity. This may indicate that monochrons are adapting to their polychronic work environment by being more flexible in their working patterns. Whilst it is highly likely that both polychronic and monochronic type individuals work in most organisations, they adapt differently to their environment. As previous research findings indicate that an individual will either adapt to the organisational culture or leave (Hsu & Wang, 2008; Slocombe & Bluedorn, 1999; Wheeler et al., 2007) it may be that in this study, the staff members working for BRIT and JCU are likely to have adapted to the organisational culture. Those who indicated an intention to leave may be those who have failed to adapt.

Another consideration is that workloads vary from person to person, one person may cope adequately with their workload while another struggles. For example in the survey one polychronic teacher commented "I am leaving my academic position and moving to a new job in a couple of months. This was prompted by my dissatisfaction with my current working environment (high workload, etc) rather than my dissatisfaction with being an academic". The impacts of individual workloads were not measured against polychronicity in this study and this may affect the reliability of results. The impact of a high workload may affect the way polychrons and monochrons deal with tasks.

Experienced Work Unit Polychronicity

Academic institutions, as with many contemporary work environments, are imposing polychronic working practices to improve efficiency (Purcell et al., 2009; Stone, 2005). How workers react to the imposition of polychronic work practices may vary significantly. There was a perception from respondents (82%) that their manager wanted them to juggle several activities at the same time and that most people tried to do that (88%). As only 4% replied that they felt their manager wanted them to do one thing at a time this tends to indicate that respondents thought the demands of the workplace were polychronic. The

responses also indicated that, in the workplaces studied, managers and supervisors tend to desire polychronic behaviour from their subordinates (Slocombe & Bluedorn, 1999). The findings also support the suggestion that congruence between an individual's preferred polychronicity and the polychronicity values of the supervisor or management may have significant consequences for the individual's commitment to the organisation or work unit (Slocombe & Bluedorn, 1999).

The imposition of polychronic tasking in the workplace was also evident in some of the comments from respondents. A polychronic supervisor commented that "In the front office environment everyone has to multi task every day, we do not get the privilege of being able to complete a task from go to whoa without interruption". Another comment from a polychronic teacher noted that "Everyone has to multitask because everyone is doing at least two, if not three, jobs. Multitasking is not a preference; it is essential in workplaces today". Although indicating multitasking is a necessity in an academic environment some respondents also noted that this did not affect their enjoyment in their work commenting that it is a reality to which one must adapt. One polychronic teacher noted that although she enjoyed her work, multi-tasking was a necessity not a choice.

Interestingly, individual's responses towards their own preferences and those of their perceptions of their work unit differed significantly. When asked to comment on other peoples working habits in an environment, responses varied. It is possible this was because individuals do not necessarily watch closely how their colleagues cope with their work. Only a few respondents (9%) felt that the people in their unit tried to complete an entire project in one day rather than several parts of several projects. Although 30% felt that most people in their unit only usually worked on one project at a time, 52% felt that most people in their unit try to do more than one thing at a time. In contrast, 42% thought that they would personally rather complete an entire project in a day than several parts of several projects and 32% said they usually work on

one project at a time. It is possible that the respondents viewed working on several tasks at a time and working on a project differently. For example, taking phone calls, dealing with paperwork and interruptions for staff and students while working on one major project over the day may still be considered to be multitasking. One monochronic teacher noted that "Most people I know like to work on just a few things at once, as it is frustrating to be able to make only incremental advances, particularly in major projects. But that, for most of us, is reality - usually I have around 50 tasks pending, and I would guess that this is pretty normal".

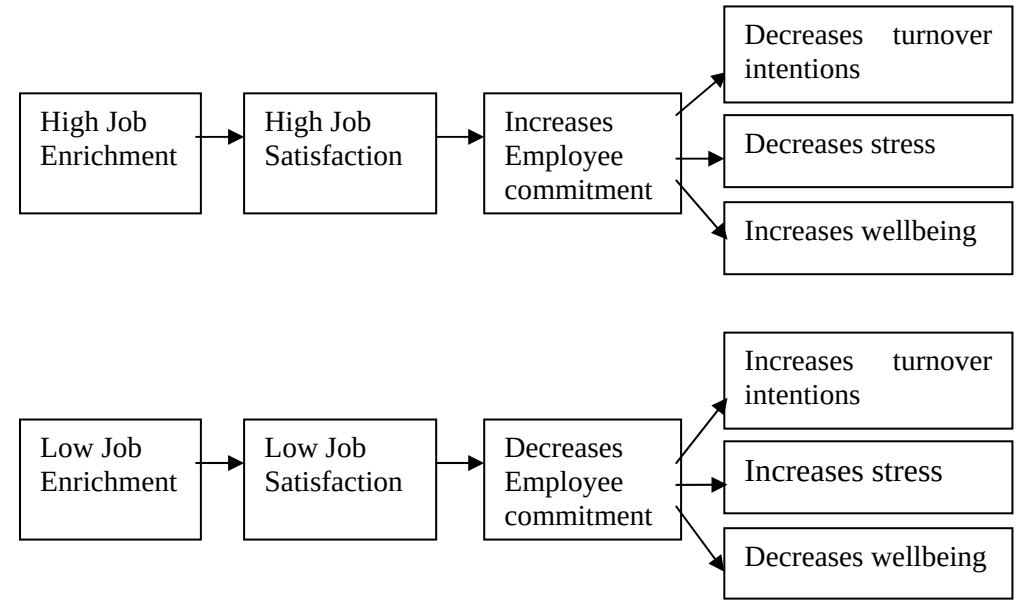
The results of the study also showed that polychrons demonstrated a stronger relationship with experienced work polychronicity than monochrons did which supports the proposition that polychrons relate better to a polychronic environment (Palmer & Schoorman, 1999; Saunders et al., 2004; Slocombe & Bluedorn, 1999; Thoms & Pinto, 1999; Whipp et al., 2002). These results also suggest that understanding the relationships that surround polychronic preference such as the impacts of situational factors may have an effect. To explore the range of situations factors that impact on relationships with the polychronic environment a range of variables including perceived stress, well being and performance were investigated.

Perceived Stress, Wellbeing and Performance

The last research question investigated whether matching the work environment to the individual's chronistic preferences would impact positively on wellbeing. The concept of wellbeing is related to individual job satisfaction, organisational commitment and performance (Hosie et al., 2006). In this study the findings for all respondents indicated that when job satisfaction is high, organisational commitment is also high. For polychrons this relationship was stronger than that of monochrons. Previous research indicates that when organisational commitment is high, intention to turnover is low (Luna-Arocas & Camps, 2007; Purcell et al., 2009). This proposition is

supported by the concept that two core criteria indicate organisational wellbeing; 1) low employee turnover and 2) high employee performance (Page & Vella-Brodrick, 2009). The findings from the study also fit with those of Slocombe and Bluedorn (1999) who found that the degree of fit or congruence between preferred polychronicity and experienced work unit polychronicity was positively related to three components of organisational commitment; willingness to exert effort, belief in and acceptance of organisation goals and fairness of performance evaluation. They found that the happier a worker is in the workplace the higher their levels of wellbeing and the lower their stress levels. These are intrinsic factors personal to each individual which vary depending on their feelings, attitudes and beliefs (Slocombe & Bluedorn, 1999). There is also a strong relationship between job satisfaction and turnover. The findings suggested that when job satisfaction is high, stress is low and vice versa. It is worthwhile for employers to understand these relationships because when job satisfaction is low workers often develop an intention to leave (Luna-Arocas & Camps, 2007). To demonstrate the relationships between job satisfaction, wellbeing and turnover intentions I have created a flow chart (Figure 3).

Figure 3. Impact of job satisfaction on turnover intentions and wellbeing



As several respondents indicated they felt the 'necessity' to multi-task and some indicated they felt overwhelmed with the workload in both the survey and their comments, this may indicate that personal congruence between preferred polychronicity and experienced levels of polychronicity in the workplace may affect their attitudes toward commitment to organisational goals (Slocombe & Bluedorn, 1999).

Monochrons indicated that their relationship with stress was higher when job satisfaction was low, whereas polychrons indicated that the relationship with stress was not as high as that for monochrons even when job satisfaction was low. Both monochrons and polychrons commented on stress and its effects in the study. There were comments of feeling continuously overwhelmed at work and never seeming to catch up. Other respondents noted the inadequacies of the system led them to be reactive, and lack of staff meant high workloads. Any of these events may lead to feelings of stress as suggested by Cohen et al. (1983) who noted that an individual's perception of how stressful workplace events are, how unpredictable, uncontrollable, and overloading they find their lives or work, may differ significantly from one person to another.

The finding that stress levels were lower in polychrons in an imposed polychronic environment indicates that they may be more aligned with a polychronic work environment than monochrons. This suggests that while polychrons working in a polychronic environment may feel more comfortable with the environment than monochrons, they may still feel some of the effects of stress from the pressures a polychronic environment imposes. Therefore, imposing a polychronic work environment would appear to be a useful organisational strategy for polychronic workers (Felker-Kaufman et al., 1991), as long as it was tempered with realistic, achievable workloads.

The findings indicated that, for monochrons, when organisational commitment and job satisfaction are low, stress is high. This is in contrast to findings from other research (Conte et al., 1999; Slocombe & Bluedorn, 1999) which found the relationship between polychronicity and stress was small and suggested no relationship to negative health outcomes, although they did find that individuals feel more time pressured when asked to work against their natural preference (Conte, et al, 1999; Kaufman-Scarborough & Lindquist, 1999; Madjar & Oldham, 2006; Slocombe & Bluedorn, 1999). The indication that 39% of respondents felt "quite exhausted by the end of the day" and only 33% felt they "were on top of things at work" suggests it may be possible that these demands build up to create pressure in some people. A monochronic teacher commented that "I love my job but there is just way too much of it, and it frustrates me to have to 'cut corners' and not do things as well as I would like to, just because of running out of time".

There was also an indication that many respondents (69%) worried about their work at home. A significant number (60%) felt exhausted by the end of the work day and 67% felt used up. It is not uncommon for people in higher level occupations who feel stressed to take their problems home, although this negative carryover can compound feelings of stress as it is felt the job is never left behind (Grant & Campbell, 2007; Warr, 1990). Wellbeing has been found to be negatively affected by negative job carryover (Page & Vella-Brodrick, 2009). As the findings indicated that polychrons relate more strongly to organisational commitment and feel less stress than monochrons these tests may be a good indication of how well individuals have adapted to their environment. They indicate that polychrons 'fit' better to the polychronic organisation than monochrons (Bluedorn et al., 1992). While none of these results can indicate causation they do support the findings of previous literature.

Polychronicity as an Organisational Strategy

Polychronic organisations would not view themselves as polychronic. Many organisations have probably not even heard of the term. However, they are considered to be polychronic as they employ a range of strategies that require employees to multi task and work in a flexible manner. Improving organisational strategies including organisational processes and human resource management has included strategies such as multi tasking and multi skilling which require employees to manage several processes at once (Purcell et al., 2009).

The findings from the study suggest that individuals do differ in their preferences for carrying out work activities. They also suggest that creating a fit between the individual and the work environment is likely to increase organisational commitment, job satisfaction, and wellbeing. This fits with Hecht and Allen's (2003) research findings which suggest employees will be more productive and experience higher levels of job satisfaction when there is congruency between their preferred and actual time personalities. Addressing these factors is likely to support organisational attempts to be seen as an employer of choice (increasing retention) and to create a competitive advantage over other organisations in their industry by increasing performance. The challenge now is for employers in polychronic organisations to find strategies to assist monochrons to adapt better to the environment and to ensure that polychrons are functioning well.

Summary

This chapter brought together the literature, data analysis and results presented in previous chapters. It expressed the overall proposition of the study. First, there was a summary of the study followed by a discussion about the findings. Next the finding of differences between genders or occupations in relation to preferred polychronicity was discussed, followed by differences between

individuals in relationship to preferred polychronicity and experienced work polychronicity. The results were interpreted within the context of the study's limitations which included possible bias through use of a non random sample. The discussion was linked back to the literature reviewed for this study to ascertain reasons for anomalies and similarities between this study and past research. The following chapter will present the conclusions and recommendations.

CHAPTER VI
CONCLUSIONS AND RECOMMENDATIONS

This chapter presents the summary, conclusions and recommendations from the study. First, the summary is presented along with the research questions. Second, the major conclusions about polychronicity in relation to gender which answer the five research questions are discussed. Next, the chapter presents a range of recommendations for future study in the area. Finally, limitations of the study are presented.

Summary of the Study

This aim of this study was to investigate the impacts of imposed polychronic behaviour upon performance and well being in the workplace. This was done by measuring the relationships between attitudes, feelings, actions and perceptions of respondents in relation to their work environment. The study was located in Northern Queensland, Australia and was comprised of 116 employees with management loads from two academic tertiary institutions. It explored the individual polychronic preferences of managers and their experienced work unit polychronicity. The study also investigated whether gender or occupation were factors that affected polychronic preference. The impacts from the work environment were measured using three groups of variables including; job satisfaction, organisational commitment and perceived stress.

Five research questions guided the study. They were:

1. Are female managers are more likely to demonstrate polychronic behaviours than male managers?

2. Is polychronicity positively related with stress in situations where there is an imposed demand for polychronic behaviour?

3. Is monochronicity positively related with stress in situations where there is an imposed demand for polychronic behaviour?

4. Are polychrons less affected by stress than monochrons in situations where there is an imposed demand for polychronic behaviour?

5. Will matching the working environment to the individual's chronistic preferences impact positively on well being?

Next, a largely quantitative approach to the study was taken for data collection using a self administered electronic survey. A range of existing scales were used to measure the variables. The sample was non random drawing on the employee databases of the two organisations requesting voluntary participation from teachers, lecturers, supervisors, and managers. The data was then collated and analysed using a range of statistical tests including; frequencies, means, t-tests, Pearson *r* correlations and multiple regression. As respondents had been asked for comments at the end of the survey these were used to bring a qualitative perspective to the study and to add depth and breadth to the results. The results were presented and then discussed. Finally, the conclusions will now be presented along with a range of recommendations for future research in the area.

Polychronicity and Gender

Research Question 1: Are female managers are more likely to demonstrate polychronic behaviours than male managers?

The findings indicated that, for the respondents studied, preferred polychronicity and experienced workplace polychronicity did not differ over sex/occupation combinations. These findings suggest that polychronicity is

more likely to be a fundamental personality trait rather than characteristic of a whole culture (Slocombe & Bluedorn, 1999). They also align with Palmer and Schoorman's (1999) proposition that there are no differences between genders in relation to time use preference or time tangibility. Therefore, the findings of this study do not support the hypothesis that female managers are more likely to demonstrate polychronic behaviours than male managers.

Polychronicity, Perceived Stress, Wellbeing and Performance

This study proposed that working in a polychronic environment imposes the 'need' to work in a polychronic manner upon employees. The study explored whether this may increase feelings of perceived stress which impact negatively upon wellbeing in individuals. The findings largely supported the four hypotheses related to the effects of imposition of a polychronic working environment on employees.

Research Question 2: Is polychronicity positively related with stress in situations where there is an imposed demand for polychronic behaviour?

The relationship between polychronicity and stress was small. The findings did not support the hypothesis that imposing a polychronic tasking environment would result in a perception of negative effects from stress in polychronic employees. This tends to support previous research findings that polychronic employees relate better to a polychronic environment (Bluedorn et al., 1999).

Research Question 3: Is monochronicity positively related with stress in situations where there is an imposed demand for polychronic behaviour?

In contrast to the findings for Research Question 2 the findings for monochronic employees did indicate a strong relationship between imposing a polychronic tasking environment and perceived stress. This does indicate that

monochrons may have trouble aligning their personal tasking preferences with the needs of the organisation in a polychronic working environment.

Research Question 4: Are polychrons less affected by stress than monochrons in situations where there is an imposed demand for polychronic behaviour?

Polychrons demonstrated a weaker relationship between the effects of experienced work unit polychronicity and perceived stress than monochrons.

Research Question 5: Will matching the working environment to the individual's chronistic preferences impact positively on well being?

The findings for all respondents indicated that when job satisfaction is high, organisational commitment is also high. They also suggested that when job satisfaction is high, stress is low. This tends to support the proposition that matching a working environment to the needs of an individual will impact positively on wellbeing.

These findings indicate that polychrons may be more aligned with a polychronic work environment than monochrons. This tends to support previous research findings that congruence between an individual's preferred polychronicity and the workplace may have an impact on organisational commitment, job satisfaction and perceived stress (Slocombe & Bluedorn, 1999).

Recommendations

The aim of this study was to investigate the effects of imposed polychronicity upon the performance and wellbeing of managers in academic work environments. Data was collected to test the five research questions relating to this aim. The findings from the data provided some interesting findings that were significant within the sample surveyed but through the limitations of the

study were not able to be extrapolated to a larger population. To improve future research the following recommendations are made.

Much of the research on polychronicity has generalised the findings to a whole culture using a small sample that is often not representative of the larger population or even the same type of population. It is merely a representation of a specific student or industry population. Many of the studies have been drawn from student samples. Comparing research on student populations with that of individuals in working environments can result in dubious generalisations (Conte et al., 1999). There need to be many studies over a range of populations to ensure an accurate outcome that can be extrapolated over a whole population. This study was limited by surveying only two organisations. It is recommended that further research on the construct of polychronicity in the workplace is conducted on workers from a range of organisations or industries.

Replicating this study in the future would provide an opportunity to ascertain whether the characteristics and preferences of respondents vary from those in the first survey. It would also reduce Type I error. To increase reliability and validity it would be recommended that a more random approach be taken to select participants. Increasing the sample size would increase power and reduce chance of type II error. Sampling across a range of populations may enable the sample size to be successfully increased. Implementing these recommendations could lead to results with a greater degree of precision which could lead to more precise theoretical statements (Slocombe & Bluedorn, 1999).

Within future questionnaire design it would be recommended to add questions to ascertain duration of tenure and intention to turnover. This may provide insights into whether respondents have worked in the organisation long enough to adapt to the environment and form a bond and the strength of organisational commitment. In addition, the impacts of the variation in

individual workloads were not measured against polychronicity in this study. To include such a measure in a future study may reduce type II error. Investigating actual changes in performance within

Quantitative analysis was able to identify and measure relationships between the imposition of a polychronic work environment and the impacts upon workers. Introducing a more robust qualitative perspective to any future study would enable the feelings, attitudes and behaviours of individuals in the workplace in relating to polychronicity to be explored in depth. Qualitative studies enable the mapping of specific examples of relationships among the variables (Lunenburg & Irby, 2008). The small amount of qualitative data collected in this study indicates the value of explaining relationships among the variables.

Limitations of the Study

The study was affected by a number of limitations:

1. As the sample was drawn from only two academic organisations in a single city the ability to extrapolate the results to the wider academic population was limited.

2. The size of the sample and the fact that it was a non random convenience sample also limited the ability to generalise the results to the larger population.

3. The limitation of time meant a full qualitative study could not be conducted to support the quantitative one. Conducting a second survey may have strengthened the results, which may have increased reliability and validity.

4. There were a range of unmeasured variables that may have impacted upon the findings. Factors external to the organisation including home life and personal issues, and internal factors such as variations in work load from person to person, may impact on perceived stress. These factors may limit the reliability of the findings.

5. Due to the limitation of time and the consideration that the study should not be too burdensome on participants this study did not measure performance.

Due to the limitations indicated above, generalisations and predictions with respect to the findings were made with caution.

Implications and Suggestions for Further Research

This research has examined the effects of imposing a polychronic working environment on academic employees. The overall findings for the study indicate that imposing a polychronic working environment on individuals may have an impact upon the way they feel about their workplace. The findings also indicate that the way monochrons and polychrons interact with their work environment differs.

One implication for the academic organisations investigated in this study is that the evidence implies that the work environment is negatively affecting the wellbeing of some employees. Whether this is the effect of polychronicity or heavy workloads is not clearly evident and would require further research. The impact of differing workloads would also be worth investigating.

The implications for the organisations is that through increasing their understanding of the needs of polychrons and monochrons, work environments may be able to be adapted to increase job satisfaction and organisational commitment. Doing this may lead to increased performance

and wellbeing whilst reducing the feelings of perceived stress in the affected employees. Increasing organisational commitment, job satisfaction and wellbeing reduces intention to leave and improves the stability of the workplace.

It would be beneficial to conduct a series of studies that explored polychronicity, job satisfaction, organisational commitment and wellbeing that were spread over a period of time. Within that type of study changes could be implemented in the workplace and the effects measured to see if job satisfaction, organisational commitment, performance and wellbeing increased.

Summary

This chapter presented the conclusions about the relationship between polychronicity and gender and the impacts of imposed polychronicity in polychronic work environments. It also presented a range of recommendations for future research in the area of polychronicity in the workplace.

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APPENDICES

Appendix A: Letter to Barrier Reef Institute of TAFE

Ms Robyn Dyer
Institute Director
Barrier Reef Institute of TAFE
PMB 1
Townsville MC
QLD 4810

4 August 2008

Dear Robyn

I am about to conduct a research study on "The impact of working in polychronic environments on performance and well being in the workplace" for my Masters Thesis through Massey University in New Zealand. I would like to include two Australian tertiary education institutes in my research study, Barrier Reef Institute of TAFE and James Cook University.

As a short background history I am currently employed as the Coordinator of the Business Diploma Programs at Barrier Reef Institute of TAFE in Townsville, North Queensland in Australia. Previously I worked in New Zealand as a self employed business person and as a lecturer at the Universal College of Learning (UCOL) in Palmerston North. I have a Bachelor of Business Studies (Business Laws) and a Post Graduate Diploma in Business and Administration through Massey University, NZ, and a Graduate Diploma in Adult and Vocational Education from Griffith University in Australia.

I have received Massey University Ethics Committee approval to conduct the research. I would now like to formally request permission to obtain access to your organisation's employees through your intranet staff database system to conduct an anonymous electronic survey. The employees I would be interested in studying include managers, supervisors and teachers/lecturers with self managed loads.

I have included an information sheet so that you can see my objectives, and copy of the email to approach your employees along with the link to the survey.

Please feel free to contact me about the proposal by email Laurna.Love@bigpond.com, at work 47505734 or by mobile phone 0416293530.

Yours faithfully

Laurna Love

Appendix B: Letter to James Cook University

Dr Gregory Stokie
Director of HR
James Cook University
101 Angus Smith Drive
Douglas
QLD 4814

13 August 2008

Dear Sir

I am about to conduct a research study on "The impact of working in polychronic environments on performance and well being in the workplace" for my Masters Thesis through Massey University in New Zealand. I would like to include two Australian tertiary education institutes in my research study, Barrier Reef Institute of TAFE and James Cook University. I met with Janet Greeley earlier in the year and she indicated I should contact you.

As a short background history I am currently employed as the Coordinator of the Business Diploma Programs at Barrier Reef Institute of TAFE in Townsville, North Queensland in Australia. Previously I worked in New Zealand as a self employed business person and as a lecturer at the Universal College of Learning (UCOL) in Palmerston North. I have a Bachelor of Business Studies (Business Laws) and a Post Graduate Diploma in Business and Administration through Massey University, NZ, and a Graduate Diploma in Adult and Vocational Education from Griffith University in Australia.

I have received Massey University Ethics Committee approval to conduct the research. I would now like to formally request permission to obtain access to your organisation's employees through your intranet staff database system to conduct an anonymous electronic survey. The employees I would be interested in studying include managers, supervisors and teachers/lecturers with self managed loads.

I have included an information sheet so that you can see my objectives, and copy of the email to approach your employees along with the link to the survey.

Please feel free to contact me about the proposal by email Laurna.Love@bigpond.com, at work 47505734 or by mobile phone 0416293530.

Yours sincerely

Laurna Love

Appendix C: Survey Questions

1. I am

male	☐
female	☐

2. My occupation is

a. Teacher/Lecturer	☐
b. Supervisor	☐
c. Manager	☐

The questions in this section ask you about your feelings in relation to the way you prefer to do your work. Please choose the answer that seems most represents your feelings.				
1	2	3	4	5
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Preferred polychronicity				
3. I like to juggle several activities at the same time				
4. I would rather complete an entire project every day than complete parts of several projects				
5. I believe people should try to do many things at once				
6. When I work by myself I usually work on one project at a time				
7. I prefer to do one thing at a time				
Experienced work unit polychronicity				
8. Most of the people in my work unit try to juggle several activities at one time				
9. My manager wants me to juggle several activities at the same time				
10. When the people in my work unit work by themselves, they usually work on one project at a time				
11. Most of the people in my unit try to complete an entire project everyday rather than complete several parts of several projects				
12. Most of the people in my work unit try to do one thing at a time				
13. My manager believes I should try to do many things at once				
14. Most of the people in my unit try to do many things at once				
15. My manager prefers that I do one thing at a time				

Desire to remain a member of the organisation & Belief in and acceptance of organisational goals. These are mixed. *Italics are the scale for org goals*
16. There are attractive benefits to remaining a member of this organisation
17. *It is important to me that the goals of this organisation are achieved*
18. *This organisation's goals are my goals*
19. Staying with this organisation has desirable consequences
20. *The success of this organisation is important to me*
21. The results of staying with this organisation are not very appealing
22. *I don't care if this organisation achieves all of its goals as long as it survives*
23. The outcomes of remaining a member of this organisation are not pleasing to me
24. *I consider the goals of this organisation to be unimportant*
25. *I don't care if the goals of this organisation are achieved*
Willingness to exert effort on behalf of the organisation *&* Job Satisfaction These are mixed. *Italics are the scale for Job Satisfaction*
26. I am willing to exert considerable effort on behalf of this organisation
27. I am willing to work hard for this organisation, doing my job to the best of my ability
28. *I find real enjoyment in my job, and I am fairly well satisfied*
29. I avoid doing any extra work that is not officially part of my job
30. I am willing to exert considerable effort on behalf of this organisation, including helpful ways that are not officially part of my job
31. *I like my job better than the average worker*

The questions in this section ask you about your feelings in relation to your enjoyment of your work. Please choose the answer that most represents your feelings.				
1	2	3	4	5
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Job Enrichment				
32. My job requires me to do many things, using a variety of my skills and talents				
33. I can make autonomous decisions at work				
34. I can organise my work as I see fit				
Negative Job Carryover				

35. After I leave my work, I keep worrying about job problems
36. I find it difficult to unwind at the end of a work day
37. I feel used up at the end of the work day
38. My job makes me feel quite exhausted by the end of a work day

The questions in this section ask you about your feelings and thoughts in relation to your work during the last month. In each case you will be asked to indicate how often you felt or thought a certain way. Although some of the questions are similar, there are differences between them and you should treat each as a separate question. The best approach is to answer each question fairly quickly. That is don't try to count up the number of times you felt a particular way, but rather indicate the answer that seems like a reasonable estimate. For each question choose from the following alternatives:

1	2	3	4	5
Never	Almost never	Sometimes	Fairly often	Very often

Perceived Stress
39. In the last month, how often have you been upset because of something that happened unexpectedly at work?
40. In the last month, how often have you felt that you were unable to control the important things in your work life?
41. In the last month, how often have you felt nervous and 'stressed' because of work?
42. In the last month, how often have you dealt successfully with irritating *work* hassles?
43. In the last month, how often have you felt that you were effectively coping with important changes that were occurring at work?
44. In the last month, how often have you felt confident about your ability to handle your *work* problems?
45. In the last month, how often have you felt that things were not going your way?
46. In the last month, how often have you found that you could not cope with all the things that you had to do?
47. In the last month, how often have you been able to control irritations affecting your work life?
48. In the last month, how often have you felt you were on top of things at work?
49. In the last month, how often have you been angered because of things that happened at work that were outside of your control?
50. In the last month, how often have you found yourself thinking about things that you have to accomplish at work?
51. In the last month, how often have you been able to control the way you spend your time?
52. In the last month, how often have you felt difficulties were piling up so high at work that you could not overcome them?
53. Comments

Appendix D: Information Sheet

The impact of working in polychronic environments on performance and well being in the workplace.

INFORMATION SHEET

Researcher's Introduction

This project is a student project that will credit towards a Masters in Management. The researcher is Laurna Love (contact Laurna.Love@bigpond.com or mobile phone 0061 416293530) employed as Coordinator of Business Diploma Programs at Barrier Reef Institute of TAFE in Townsville, Queensland, Australia. The project supervisor is Dr Keri Logan of Massey University (K.A.Logan@massey.ac.nz Phone 001164 04 8012794 (ext 6366).

This study is based on investigating the working preferences of teachers, lecturers, managers and supervisors in academic environments. In particular I am interested in how you work, and whether you multi task or whether you prefer to complete one task at a time. I am interested in finding out whether, in general, males and females demonstrate different preferences. I would also like to investigate the different effects working in a busy academic environment has upon the different styles.

Participant Recruitment

Participant recruitment will include:

- Surveying teachers, lecturers, supervisors and managers who volunteer to complete anonymous electronic surveys distributed through their organisational intranet email database.
- There will be no need to obtain the names or any other identifying information for the survey from participants
- Selection criteria will require that participants include only teachers, lecturers, supervisors and managers from the participating institutes.
- Support staff including cleaners, gardeners, store persons, maintenance, and administration staff with no managerial duties will not be surveyed.
- Teachers (eg casual staff and junior teachers) without management duties will not be surveyed.
- Exclusion criteria will require that participants who do not complete more than 75% of the survey will be excluded. Those who do not complete the first two questions will also be excluded.
- The aim is to survey at least 150 participants. This means that the sample is large enough to ensure the data collected can be interpreted to give significant reliable information that is able to be generalized across the larger population.
- As participation is voluntary participants may elect to withdraw from the survey at any time if they feel discomfort or risks as a result of participation. Withdrawal would be by not submitting the survey.

Project Procedures

No data collected will identify any individual participant or any institute:

- Data obtained will be entered into a database for storage and analysis
- Data obtained will then be analysed to determine similarities and differences between participants responses.
- Data will be stored electronically in the database for 5 years and then deleted/destroyed. The database and accompanying analysis will be transferred from the computer hard drive to a CD Rom and stored in a locked cabinet
- Institutes and participants may access a summary of the project findings by emailing a request for a summary to Laurna.Love@bigpond.com This enables the person to request the summary separately from the information they have given in the survey.
- Any requests for summaries of the project findings will remain confidential and the person's identity and email information deleted immediately after the information has been provided.

Participant involvement

Participants are requested to participate in the survey on a voluntary basis. It is expected that the survey will take between 7 and 10 minutes to complete.

Participant's Rights

As participation in the survey is on a voluntary basis; ***Completion and return of the questionnaire implies consent. You have the right to decline to answer any particular question.***

Support Processes

Every effort has been taken to ensure no harm or risk to the participants and institutes involved in this study. If a participant feels any threat of harm or feeling of discomfort the researcher requests that they discontinue the survey and do not submit it.

Project Contacts

Please feel free to contact the researcher Laurna Love on 0061 7 47727470 after hours, 0416293530 mobile or by email on Laurna.Love@bigpond.com if you have any questions about the project.

Committee Approval Statement

This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern B, Application 08/27. If you have any concerns about the conduct of this research, please contact Dr Karl Pajo, Chair, Massey University Human Ethics Committee: Southern B, telephone NZ 04 801 5799 x 6929, email humanethicsouthb@massey.ac.nz

Appendix E: Email to Prospective Participants

I am currently conducting a survey for my Masters of Management Studies. My study is based on investigating the working preferences of teachers, lecturers, managers and supervisors in academic environments. If you fit into one of these categories I would appreciate your participation. I am interested in how you work, and whether you multi task or whether you prefer to complete one task at a time. I am interested in finding out whether, in general, males and females demonstrate different preferences. I would also like to investigate the different effects working in a busy academic environment has upon the different styles.

The survey is completely anonymous; there will be no individual identification of participants and the results will be aggregated. Completion and return of the questionnaire implies that you have consented to participate in the survey. It is expected that the survey should only take between 7 and 10 minutes to complete. For further information please see the Information Sheet attached to this email.

If you would like to participate in the survey please click on the link below.

http://www.surveymonkey.com/s.aspx?sm=uLTic_2bIEF5SIvnpM3vpKMQ_3d_3d

Appendix F: Independent Samples Test for PrefPoly and ExpPoly

Group Statistics

Variable	Sex	N	Mean	Std. Deviation	Std. Error Mean
Pref Poly	Male	47	3.0255	.87140	.12711
	Female	69	3.0283	.89498	.10774
EwuPoly	Male	47	3.6941	.58561	.08542
	Female	69	3.6938	.52970	.06377

		Levene's Test for Equality of Variances		T-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2- tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Preferred Polychronicity	Equal variances assumed	.007	.931	-.016	114	.987	-.00273	.16748	-.33451	.32905
	Equal variances not assumed			-.016	100.688	.987	-.00273	.16663	-.33328	.32783
Experienced Work Unit Polychronicity	Equal variances assumed	.979	.325	.003	114	.998	.00031	.10458	-.20686	.20747
	Equal variances not assumed			.003	92.189	.998	.00031	.10660	-.21140	.21201

*p<.05 (two tailed test)

Appendix G: Tests of Between-Subjects Effects

Between-Subjects Factors

		Value Label	N
Q1 Sex	1	Male	47
	2	Female	69
Q2 Occupation	1	Teacher/Lecturer	87
	2	Manager/Supervisor	29

Tests of Between-Subject Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	1.756*	3	.585	.748	.526
Intercept	755.708	1	755.708	965.748	.000
Q1	.432	1	.432	.552	.459
Q2	.002	1	.002	.003	.956
Q1*Q2	1.636	1	1.636	2.091	.151
Error	87.641	112	.783		
Total	1152.383	116			
Corrected Total	89.397	115			

* R Squared =.020 (Adjusted R Squared = -.007)

Appendix H: Descriptive Data for Two Groups

	LoHiPoly	N	Mean	Std. Deviation	Std. Error Mean
Pref Poly	.00	62	2.3540	.61580	.07821
	1.00	54	3.8000	.33421	.04548
EwuPoly	.00	62	3.6028	.56427	.07166
	1.00	54	3.7986	.51990	.07075
MembOrg	.00	62	3.5484	.96966	.12315
	1.00	54	3.7222	.81794	.11131
OrgGoals	.00	62	3.7070	.68995	.08782
	1.00	54	3.8611	.68278	.09292
OrgEffort	.00	62	4.0282	.64672	.08213
	1.00	54	4.1296	.63458	.08636
JobSat	.00	62	3.5081	.92547	.11753
	1.00	54	3.7130	.90908	.12371
JobRich	.00	62	4.1290	.52394	.06654
	1.00	54	4.2346	.60615	.08249
JobNeg	.00	62	3.6935	.94892	.12051
	1.00	54	3.5417	.89515	.12181
Stress	.00	62	3.0173	.62534	.07942
	1.00	54	2.8360	.46470	.06324

Appendix I: Independent Samples Test for Two Groups

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
		Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower
prefPoly	Equal variances assumed	36.624	.000	-15.388	114	.000	-1.44597	.09397	-1.63211	-1.25982
	Equal variances not assumed			-15.983	96.530	.000	-1.44597	.09047	-1.62554	-1.26640
ewuPoly	Equal variances assumed	.030	.863	-1.933	114	.056	-.19579	.10128	-.39642	.00484
	Equal variances not assumed			-1.944	113.625	.054	-.19579	.10070	-.39529	.00371
membOrg	Equal variances assumed	.694	.407	-1.035	114	.303	-.17384	.16795	-.50655	.15888
	Equal variances not assumed			-1.047	113.893	.297	-.17384	.16600	-.50267	.15500
orgGoals	Equal variances assumed	.026	.872	-1.206	114	.230	-.15412	.12781	-.40731	.09907
	Equal variances not assumed			-1.207	112.132	.230	-.15412	.12772	-.40717	.09893
orgEffort	Equal variances assumed	.395	.531	-.850	114	.397	-.10140	.11933	-.33780	.13500
	Equal variances not assumed			-.851	112.367	.397	-.10140	.11918	-.33753	.13472
jobSat	Equal variances assumed	.222	.638	-1.199	114	.233	-.20490	.17085	-.54336	.13356
	Equal variances not assumed			-1.201	112.338	.232	-.20490	.17064	-.54299	.13320
jobRich	Equal variances assumed	.789	.376	-1.006	114	.317	-.10554	.10492	-.31338	.10231
	Equal variances not assumed			-.996	105.577	.322	-.10554	.10598	-.31566	.10459
jobNeg	Equal variances assumed	.832	.364	.883	114	.379	.15188	.17205	-.18895	.49271
	Equal variances not assumed			.886	113.255	.377	.15188	.17135	-.18759	.49136
stress	Equal variances assumed	5.204	.024	1.750	114	.083	.18130	.10358	-.02388	.38649
	Equal variances not assumed			1.786	111.353	.077	.18130	.10152	-.01986	.38246

Appendix J: Independent Samples Test for Three Groups

Group Statistics

Poly 012		N	Mean	Std. Deviation	Std. Error Mean
Pref Poly	0	37	1.9392	.42706	.07021
	2	44	3.8909	.30333	.04573
EwuPoly	0	37	3.5236	.57346	.09428
	2	44	3.8324	.51640	.07785
Stress	0	37	3.0907	.66999	.11014
	2	44	2.8133	.47909	.07223

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Interval Difference Lower	Confidence of the Upper
Pref Poly	Equal variances assumed	5.039	.028	-23.975	79	.000	-1.95172	.08141	-2.11375	-1.78969
	Equal variances not assumed			-.23.294	63.461	.000	-1.95172	.08379	-2.11913	-1.78431
EwuPoly	Equal variances assumed	.103	.749	-2.548	79	.013	-.30874	.12115	-.54989	-.06759
	Equal variances not assumed			-5.525	73.301	.014	-.30874	.12226	-.55239	-.06508
Stress	Equal variances assumed	7.335	.008	2.167	79	.033	.27742	.12804	-.02257	.53227
	Equal variances not assumed			2.106	63.747	.039	.27742	.13171	.01427	.54057

(mono012= 0, poly012 = 2)

Appendix K: Independent Samples Test for Three Groups of Variables

Group Statistics

Poly 012		N	Mean	Std. Deviation	Std. Error Mean
OrgCommit	0	37	3.6111	.70056	.11517
	2	44	3.9059	.59598	.08985
AllJobSat	0	37	3.7680	.68610	.11279
	2	44	3.9470	.70438	.10619
AllJobStress	0	37	3.4204	.77312	.12710
	2	44	3.1737	.66286	.09993

(Mono012=0, Poly 012=2)

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Lower	Upper
OrgCommit	Equal variances assumed	.256	.614	-2.047	79	.044	-.29482	.14404	-.58152	-.00812
	Equal variances not assumed			-2.018	71.104	.047	-.29482	.14607	-.58608	-.00357
AllJobSat	Equal variances assumed	.006	.936	-1.153	79	.253	-.17895	.15527	-.48801	.13011
	Equal variances not assumed			-1.155	77.274	.252	-.17895	.15492	-.48741	.12951
AllStress	Equal variances assumed	1.942	.167	1.546	79	.126	.24667	.15953	-.07088	.56421
	Equal variances not assumed			1.526	71.417	.132	.24667	.16168	-.07568	.56901

Appendix L: Correlations for all Variables for Monochrons

		PrefPoly	EwuPoly	MembOrg	OrgGoals	OrgEffort	JobSat	JobRich	JobNeg	Stress
PrefPoly	Pearson Correlation	1	.060	.075	.198	-.071	.021	-.006	-.219	-.196
	Sig. (2-tailed)		.725	.660	.239	.674	.901	.974	.192	.245
	N	37	37	37	37	37	37	37	37	37
EwuPoly	Pearson Correlation	.060	1	-.278	-.313	-.272	-.335*	-.262	.070	.167
	Sig. (2-tailed)	.725		.095	.060	.104	.043	.117	.681	.322
	N	37	37	37	37	37	37	37	37	37
MembOrg	Pearson Correlation	.075	-.278	1	.706**	.503**	.722**	.593**	-.385*	-.555**
	Sig. (2-tailed)	.660	.095		.000	.002	.000	.000	.019	.000
	N	37	37	37	37	37	37	37	37	37
OrgGoals	Pearson Correlation	.198	-.313	.706**	1	.661**	.592**	.490**	-.287	-.519**
	Sig. (2-tailed)	.239	.060	.000		.000	.000	.002	.085	.001
	N	37	37	37	37	37	37	37	37	37
OrgEffort	Pearson Correlation	-.071	-.272	.503**	.661**	1	.494**	.486**	.011	-.202
	Sig. (2-tailed)	.674	.104	.002	.000		.002	.002	.950	.232
	N	37	37	37	37	37	37	37	37	37
JobSat	Pearson Correlation	.021	-.335*	.722**	.592**	.494**	1	.681**	-.230	-.482**
	Sig. (2-tailed)	.901	.043	.000	.000	.002		.000	.170	.003
	N	37	37	37	37	37	37	37	37	37
JobRich	Pearson Correlation	-.006	-.262	.593**	.490**	.486**	.681**	1	.110	-.167
	Sig. (2-tailed)	.974	.117	.000	.002	.002	.000		.518	.323
	N	37	37	37	37	37	37	37	37	37
JobNeg	Pearson Correlation	-.219	.070	-.385*	-.287	.011	-.230	.110	1	.812**
	Sig. (2-tailed)	.192	.681	.019	.085	.950	.170	.518		.000
	N	37	37	37	37	37	37	37	37	37
Stress	Pearson Correlation	-.196	.167	-.555**	-.519**	-.202	-.482**	-.167	.812**	1
	Sig. (2-tailed)	.245	.322	.000	.001	.232	.003	.323	.000	
	N	37	37	37	37	37	37	37	37	37

* Correlation is significant at the 0.05 level (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed).

Appendix M: Correlations for all Variables for Polychrons

		PrefPoly	EwuPoly	MembOrg	OrgGoals	OrgEffort	JobSat	JobRich	JobNeg	Stress
PrefPoly	Pearson Correlation	1	.018	.275	.157	.373*	.213	.245	-.124	-.075
	Sig. (2-tailed)		.908	.071	.308	.013	.164	.109	.424	.629
	N	44	44	44	44	44	44	44	44	44
EwuPoly	Pearson Correlation	.018	1	.119	.069	-.016	-.115	-.204	.100	.114
	Sig. (2-tailed)	.908		.442	.656	.918	.456	.183	.516	.461
	N	44	44	44	44	44	44	44	44	44
MembOrg	Pearson Correlation	.275	.119	1	.467**	.260	.532**	.381*	-.137	-.349*
	Sig. (2-tailed)	.071	.442		.001	.089	.000	.011	.376	.020
	N	44	44	44	44	44	44	44	44	44
OrgGoals	Pearson Correlation	.157	.069	.467**	1	.731**	.581**	.541**	.005	-.283
	Sig. (2-tailed)	.308	.656	.001		.000	.000	.000	.972	.063
	N	44	44	44	44	44	44	44	44	44
OrgEffort	Pearson Correlation	.373*	-.016	.260	.731**	1	.425**	.425**	.041	-.101
	Sig. (2-tailed)	.013	.918	.089	.000		.004	.004	.789	.514
	N	44	44	44	44	44	44	44	44	44
JobSat	Pearson Correlation	.213	-.115	.532**	.581**	.425**	1	.655**	-.006	-.397**
	Sig. (2-tailed)	.164	.456	.000	.000	.004		.000	.969	.008
	N	44	44	44	44	44	44	44	44	44
JobRich	Pearson Correlation	.245	-.204	.381*	.541**	.425**	.655**	1	-.137	-.337*
	Sig. (2-tailed)	.109	.183	.011	.000	.004	.000		.375	.025
	N	44	44	44	44	44	44	44	44	44
JobNeg	Pearson Correlation	-.124	.100	-.137	.005	.041	-.006	-.137	1	.678**
	Sig. (2-tailed)	.424	.516	.376	.972	.789	.969	.375		.000
	N	44	44	44	44	44	44	44	44	44
Stress	Pearson Correlation	-.075	.114	-.349*	-.283	-.101	-.397**	-.337*	.678**	1
	Sig. (2-tailed)	.629	.461	.020	.063	.514	.008	.025	.000	
	N	44	44	44	44	44	44	44	44	44

* Correlation is significant at the 0.05 level (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed).