PREDICTING MULTITASKING PERFORMANCE AND
UNDERSTANDING THE NOMOLOGICAL NETWORK OF
POLYCHRONICITY

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by
Zackary Magdy Girgis
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The Undersigned Faculty Committee Approves the
Thesis of Zackary Magdy Girgis:

Predicting Multitasking Performance and Understanding the Nomological
Network of Polychronicity

_________________________
Jeffrey Conte, Chair
Department of Psychology

_________________________
Melody Sadler
Department of Psychology

_________________________
Darrell Pugh
Department of Public Administration

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Approval Date
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DEDICATION

This thesis is dedicated to my mother and father. Thank you for all your support and unconditional love. I am truly blessed to have you as role-models, let alone parents. Mom, I will never forget all the advice you have given me over the years. As I embark on my career, I hope to follow in your footsteps as the intelligent, ambitious, and successful person you are. Dad, regardless of where my career takes me, I look forward to continuing our Thursday evening phone calls in which you never hang up before asking, “Is there anything you need?” I love you both very much.
ABSTRACT OF THE THESIS

Predicting Multitasking Performance and Understanding the Nomological Network of Polychronicity

by

Zack Magdy Girgis

Master of Arts in Psychology
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Multitasking has become an increasingly integral aspect of almost all jobs today, and employees are increasingly being asked to juggle tasks, work on various projects concurrently, and divide their attention. Because of individual differences in multitasking, some individuals may be a better fit for jobs that require multitasking than others. Researchers in the field of applied psychology have recognized employers’ desire to hire job applicants on the basis of multitasking ability and have taken a number of steps to understand what multitasking is, how to predict who can and cannot multitask, and how managers within these organizations can use their knowledge of multitasking to be more effective.

Due to the changing working environment described above, a construct that has recently received increased attention is the personality trait called polychronicity. Polychronicity is defined as one’s preference to multitask as well as a belief that multitasking is the best way to work on tasks. Polychronicity has been shown to predict a variety of work related outcomes and has been shown to relate to a variety of other individual difference variables. However, the nomological network surrounding polychronicity is not fully understood. Thus, one purpose of the present study was to further develop this network by examining polychronicity’s relationship with work locus of control, the five-factor model of personality, cognitive ability, and multitasking ability. Previous research has been inconclusive about the relationship between polychronicity and multitasking performance. Thus, this relationship will be revisited. To that end, a second purpose of this study was to determine what individual difference variables predict multitasking ability. The same set of variables used to develop the nomological network around polychronicity will also be used to do this. In addition to analyzing variables’ simple relationships, this study examined several interactive effects among predictors. Eleven total hypotheses were tested.

One hundred sixty one undergraduates participated in a battery of computer and pencil and paper based ability and personality assessments. Bivariate correlation, multiple regression, and moderated multiple regression analyses were conducted. A strong positive correlation between general cognitive ability and multitasking ability was found. Openness to experience was found to negatively relate to multitasking ability, such that those who were more imaginative and curious multitasked worse than those who preferred structure and tradition. Additionally, age was found to negatively relate to multitasking ability. Extraversion was the only variable that significantly correlated with polychronicity and the relationship was such that extraverts tended to be more polychronic than introverts. A significant relationship between polychronicity and multitasking ability was not observed.
The results of this study have noteworthy implications on personnel selection and managerial practices. Employers that would like to use a multitasking measure to make hiring decisions should be cautioned that it may be biased against minority racial groups. Also, managers can use the findings from this guide their task delegating decisions.
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INTRODUCTION

Consider any job and chances are there are aspects of it that require at least some multitasking ability. A retail salesperson must often help one customer while being interrupted by other customers with questions. Teachers and professors must juggle many tasks such as lesson planning, grading, research, and participating in staff meetings often within the same general period of time. Managers in particular must multitask to succeed at their jobs. Retail managers, for example, monitor their subordinates, assist customers, keep a regional manager up to date, monitor inventory, and more. Mintzberg (1973) conducted an in depth look at managerial performance to determine the nature of managerial work. Among other findings, Mintzberg (1973) indicated that managerial work activities are characterized by “brevity, variety, and fragmentation” (p. 31). According to his study, managers are “seldom able or willing to spend much time on any one issue in any one session” (p. 33). This finding stems directly from the number of demands placed on managers at any given time. Most of these demands are often time sensitive especially in retail, which forces managers to work on them simultaneously or within the same general time period. Completing multiple tasks sequentially, as opposed to simultaneously, could result in a frustrated customer, a lost sale, a dissatisfied employee, a disappointed regional manager, or worse.

The Merriam-Webster online dictionary definition of multitasking is “the performance of multiple tasks at one time.” Delbridge (2000) defined multitasking as being able to work on “multiple task goals in the same general time period by engaging in frequent
switches between individual tasks” (p. 1). Multitasking can occur either by choice or depending on a situation. Polychronic individuals, for example, tend to perform multiple tasks at the same time by their own volition. In other words, they prefer to multitask. On the other hand, many researchers who study multitasking also examine how people react to interruptions (Delbridge, 2000). An interruption can place people in a situation where they must switch between or work on multiple tasks simultaneously even though they may have originally planned to work on one single task. Whether by choice or not, being able to perform well on multiple tasks at a time is a requirement for almost every job today (Bühner, König, Pick, & Krumm, 2006).

HYPOTHESIS DEVELOPMENT

In the following section, the literature on multitasking ability and polychronicity will be reviewed, respectively. Within each of these constructs’ sections, the literature on cognitive ability, work locus of control, and the five-factor model of personality will be also be reviewed to generate theoretical links and subsequent hypothesized relationships between these constructs. A summary of all 11 hypotheses can be seen in Table 1.

MULTITASKING ABILITY

Solomons and Stein (1896) conducted some of the earliest research on multitasking by having participants take dictation and read simultaneously. In another early study, Welch (1898) had participants squeeze a dynamometer while working on arithmetic problems. For the last several decades, much of the research on multitasking has been conducted by researchers within the realm of cognitive psychology (Bühner et al., 2006). Logan and Gordon (2001) studied multitasking by looking at executive control and visual attention.
Table 1. Hypotheses

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<td>1</td>
<td>General cognitive ability will significantly and positively correlate with multitasking ability.</td>
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<td>2</td>
<td>After controlling for general cognitive ability, those with an internal work locus of control will perform significantly better in a multitasking situation than those with an external work locus of control.</td>
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<td>3</td>
<td>After controlling for general cognitive ability, extraversion will significantly and positively correlate with multitasking ability.</td>
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<td>4</td>
<td>After controlling for general cognitive ability, conscientiousness will significantly and positively correlate with multitasking ability.</td>
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<td>5</td>
<td>After controlling for general cognitive ability, openness to experience will significantly and positively correlate with multitasking ability.</td>
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<td>6</td>
<td>After controlling for general cognitive ability, polychronicity will significantly and positively correlate with multitasking ability.</td>
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<tr>
<td>7</td>
<td>General cognitive ability will moderate the relationship between polychronicity and multitasking performance such that polychronics with higher levels of cognitive ability will multitask significantly better than polychronics with lower levels of cognitive ability.</td>
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<tr>
<td>8</td>
<td>After controlling for general cognitive ability, work locus of control will significantly moderate the relationship between polychronicity and multitasking performance such that polychronics with an internal locus of control will multitask significantly better than polychronics with an external locus of control.</td>
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<td>Extraversion will significantly and positively correlate with polychronicity.</td>
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<td>After controlling for general cognitive ability, extraversion will significantly moderate the relationship between polychronicity and multitasking performance such that extraverted polychronics will multitask better than introverted polychronics.</td>
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<td>11</td>
<td>Conscientiousness will significantly and negatively correlate with polychronicity.</td>
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Meyer and Kieras (1997) examined multitasking and executive cognitive processes. Yeung and Monsell (2003) investigated the effects of practice on task performance when switching between tasks. These studies are but a small set of a large body of cognitive research on multitasking, but they, along with most cognitive studies on multitasking, have repeatedly demonstrated that multitasking impairs performance and overall quality of work (Delbridge, 2000). This finding holds true for both dual task research and task switching research.

Dual task research studies how people perform on multiple tasks while doing them simultaneously (e.g., Solomons & Stein, 1896; Welch, 1898). Lindenberger, Marsiske, and Baltes (2000) had participants walk on a narrow track while simultaneously memorizing word lists. Baddeley and Lieberman (1980) required participants to visualize numbers in a matrix or memorize a nonsense sequence as a primary task. As a secondary task, the researchers required participants to respond to the brighter of two levels of brightness or maintain a beam of light on a pendulum while blindfolded. Beech (1984) replicated Baddeley and Lieberman (1980) but replaced the pendulum task with a task that required participants to press a matrix of buttons in a specific sequence. Each of these studies demonstrated in their own unique ways that tasks of all types, which included locomotion, memory, visual, verbal, and spatial tasks, interfere with one another. These interferences resulted in poorer performance on both tasks.

Task switching research investigates how people perform on multiple tasks when alternating between them. Guzy and Axelrod (1972) asked participants to listen to a series of clicks in either one ear or alternating between ears. They found that participants undercounted the number of clicks when they had to shift their attention. Rogers and Monsell (1995) had participants switch between a numerical task, which required them classify a
presented number as even or odd, and a letter task, which required them to classify a presented letter as a consonant or a vowel. Participants in non-switching conditions had better reaction times and error rates. Garavan (1998) had participants maintain running counts of objects presented to them. Participants had to switch between counting each of two objects. Even with practice, participants were unable to eliminate the effects of switching on reaction time and error rate.

If people simply cannot multitask well, then this begs the question, why do most jobs require people to multitask? Simply put, this is the way the world works today (pun intended). Life, and therefore work, moves at a faster pace today than ever before. To meet the demands of this fast paced lifestyle, people are forced to accomplish more in less time, even at the cost of quality. Given this fact of life and the influential findings by researchers such as Mintzberg (1973), it should come as no surprise that multitasking ability has become a popular topic in the applied setting.

In the field of applied psychology, researchers have also studied multitasking, but have been more interested in its implications on overall job performance. Gopher and colleagues (Gopher, 1982; Gopher & Kahneman, 1971), for example, studied airplane pilot performance by using selective and dichotic listening tasks, which required participants to multitask by shifting their attention to multiple sources of information. Pilots who were better able to shift their attention (i.e., multitask) performed better. Stankov, Fogarty, and Watt (1989) required participants to work on two cognitive tasks (such as those involving numbers, shapes, and word groups) presented simultaneously. The authors concluded that multitasking performance is a predictor of successful managerial ability. Not surprisingly, the
measure developed by Stankov et al. (1989) and a number of other measures of multitasking ability have been developed for selection and promotion purposes (Delbridge, 2000).

Some applied researchers have also worked to build the nomological network of personality constructs surrounding multitasking performance. Ishizaka, Marshall, and Conte (2001) determined that although the global Type A behavior pattern does not correlate significantly with multitasking performance, the Type A behavior pattern subcomponents of achievement striving and competitiveness do correlate with multitasking performance. König, Bühner, and Mürling (2005) studied the relationships between extraversion and polychronicity with multitasking performance and determined that neither relationship was significant. The authors of this study admitted to having results counter to previous theories and recommended that replication be performed on the relationship between extraversion and multitasking performance before making any rigid conclusions. With regard to polychronicity, König and colleagues (2005) and Ishizaka et al. (2001) both concluded that the construct does not correlate with multitasking performance. However, Zhang, Goonetilleke, Plocher, and Liang (2005) determined that polychronic individuals made fewer errors on a computerized multitasking situation, on average, than monochronic individuals. It is worth mentioning that an unpublished dissertation by Kinney (2007) examined some of these same relationships and determined that polychronicity and extraversion both had significant, though weak, relationships with multitasking performance.

Research on multitasking performance has not yet painted a clear picture of the nomological network surrounding the construct. One purpose of the present study is to revisit past studies to build a better understanding of what constructs predict multitasking performance. Because multitasking has become such an integral part of today’s jobs,
developing a thorough understanding of constructs that predict multitasking performance will be very valuable in the creation and implementation of useful and valid selection tools.

**Multitasking Ability and General Cognitive Ability**

The evidence is clear that general cognitive ability is one of the strongest predictors of job performance (Hartigan & Wigdor, 1989; Hunter, 1986; Hunter & Hunter, 1984; Ree, Earles, & Teachout, 1994; Schmidt & Hunter, 1998). This remains true across occupations, job complexities and job levels (Fine & Nevo, 2008). General cognitive ability is such a strong predictor of job performance that it has been difficult to determine if there are any other predictors of performance that are not really just aspects of cognitive ability. There have been many constructs other than cognitive ability that have been found to predict job performance, though not many have been found to predict performance as consistently across jobs and situations. Conscientiousness is one of the few other constructs that is fundamentally different than cognitive ability and has consistently predicted job performance (Gottfredson, 1997; Schmidt & Hunter, 1998). The personality trait of extraversion is an example of a construct that has been shown to explain additional variance in job performance beyond cognitive ability, though only in select jobs. Conte and Jacobs (2003) demonstrated that extraversion explains unique variance in the context of train operators and Conte and Gintoft (2005) demonstrated that it explains unique variance for performance in sales. This is just one example among many other constructs that can predict job performance, though none are nearly as robust as cognitive ability.

In terms of jobs that require employees to multitask, theory and empirical evidence suggests that cognitive ability significantly predicts multitasking performance. The
theoretical link between multitasking ability and cognitive ability can be understood by delving into the field of cognitive psychology. The most widely accepted model of the structure of human cognition was proposed by cognitive psychologist John Carroll (Esters & Ittenbach, 1999). Carroll’s Three Stratum Theory of Intelligence proposes that cognitive ability is a hierarchy composed of three levels. At the first level is the general intelligence factor to process information (Carrol, 1993). At the second level is fluid intelligence, crystallized intelligence, general memory and learning, broad visual perception, broad auditory perception, broad retrieval ability, broad cognitive speediness and processing speed (the third level is composed of 69 specific abilities related to those in level 2). Several of these second level factors (e.g., fluid intelligence, general memory, broad auditory perception) are particularly relevant to multitasking ability and provide a strong theoretical link between general cognitive ability and multitasking performance. Cognitive psychologists Ben-Shakhar and Sheffer (2001) described the same relationship in terms of attentional resources. Since multitasking situations require more attentional resources, it is assumed that greater cognitive resources and/or greater abilities to allocate those resources explain individual differences in general cognitive ability (Ben-Shakhar & Sheffer, 2001).

Researchers have used dual task methods to confirm a strong relationship between multitasking performance and general cognitive ability (Fogarty & Stankov, 1988; Roberts, Beh, & Stankov, 1988; Stankov, 1988, 1989). In the applied psychology arena, König et al. (2005) and Kinney (2007) also found significant relationships between cognitive ability and multitasking performance. This consistent relationship between general cognitive ability and multitasking performance will be integral to the formulation of the present study’s hypotheses.
Research in both cognitive (Fogarty & Stankov, 1988; Roberts et al., 1988; Stankov, 1988, 1989) and applied psychology (Kinney, 2007) have found consistent evidence to support this relationship. Given these consistent findings, the following hypothesis is proposed:

- **Hypothesis 1:** General cognitive ability will significantly and positively correlate with multitasking ability.

The consistently observed relationship between these two constructs provides grounds to use cognitive ability as a control variable to examine if other variables can explain incremental validity in multitasking performance beyond what can be explained by general intelligence. Therefore, cognitive ability will be controlled for in subsequent hypotheses predicting multitasking performance.

**Multitasking Ability and Work Locus of Control**

Locus of control is an often studied construct in personality research. The construct was first developed by Julian B. Rotter (1954, 1966). It is defined as one’s expectancy that reinforcement or an outcome is determined by one’s own behavior or by external factors (Rotter, 1990). People who believe that rewards and punishments are contingent on their own actions are classified as having an internal locus of control, and those who believe that rewards and punishments is contingent on chance, luck, fate, powerful others, or are simply unpredictable are said to have an external locus of control (Rotter, 1990). Gomez (1997) refers to locus of control as one’s beliefs that he or she is control of life events. Research on locus of control is very widespread and has been studied by most fields within psychology, including clinical, social, personality, health, and developmental. The present study, however, will examine locus of control with respect to work and work related outcomes.
Several studies have analyzed the relationship between locus of control and job performance. Heisler (1974) examined personal effectiveness data on 175 government employees based on: number of promotions, salary increases, awards received, current salary, and grade differential, which was defined as current job grade level minus entry job grade level. Composite scores of these five factors were calculated to measure employees’ job success. Heisler correlated this performance index with Rotter’s (1966) 29-item locus of control scale (in which high scores indicate that an individual has an external locus of control and low score indicate that an individual has an internal locus of control) and determined a significant correlation of -.25 (p < .01). Andrisani and Nestel (1976) conducted a 2-year longitudinal study on a sample of 2,972 males examining at a number of variables indicative of work success (including hourly earnings, financial progress, occupational attainment, and job satisfaction) and their relationships with locus of control. Using a shortened version of the Rotter (1966) scale, the authors also concluded that internals have more success at work than externals.

Although the Rotter (1966) scale is perhaps the most widely used and well known measure of locus of control, a number of studies using work-specific locus of control scales have also been conducted. Phares (1976) suggested that the Rotter (1966) scale is too general and that researchers should develop locus of control scales that are specific to the domain of study to improve the construct’s predictiveness. Spector (1988) constructed a 16-item work locus of control scale that participants across 6 different samples completed along with the Rotter (1966) scale. The author correlated the work locus of control scale with several work behavior constructs, such as commitment, job satisfaction, intention, autonomy, and influence. He demonstrated significant correlations with constructs indicative of job
performance. Spector (1988) also confirmed Phares’ suggestion by demonstrating that the work specific scale was a more precise measure of locus of control in the context of work because it yielded stronger correlations with work behaviors than Rotter’s (1966) measure. Hattrup, O'Connell, and Labrador (2005) also constructed a 15-item work specific locus of control scale and distributed it to 2 samples in 2 different studies. They found a significant relationship between work locus of control and job performance. They concluded that “locus of control explained an additional .03 to .11 proportion of variance in job performance after accounting for ability and conscientiousness” (p. 477). The next step is to determine if locus of control, which has also been shown to predict job performance, is also a predictor of multitasking ability.

The theory behind the relationship between work locus of control and multitasking performance stems from the idea that when individuals are placed in a situation that requires them to multitask, they will feel more stress. Internals believe that they are responsible for the outcomes that ensue from their actions and externals believe that other external factors, such as the environment, determine ensuing outcomes. Understanding this is important when considering the relationship between locus of control and multitasking ability. Research has shown that when faced with a difficult situation, internals generally feel less stress and anxiety than externals and therefore are more motivated to perform (Anderson, Hellreigel, & Slocum, 1977; Spector, 1982). As discussed earlier, situations that require individuals to multitask put more strain on their cognitive resources. It logically seems to follow that if a stressor is perceived, performance would depend in part on whether or not individuals believe they can manage the stressor (i.e., internal locus of control; Kinney, 2009). From this, it seems logical that if faced with a multitasking situation, which will tend to be more
difficult than a single task situation, internals will perform better than externals. If the situation is too difficult, externals will likely feel that the outcome of their performance is out of their hands and they will likely exert less effort. One study by Kinney (2009) analyzed the relationship between work locus of control and multitasking performance and found a significant relationship. Although the work locus of control measure Kinney used only had moderate reliability (α =.64), this significant relationship provides some empirical evidence of the potential relationship between work locus of control and multitasking performance. Therefore, the following hypothesis is proposed:

- Hypothesis 2: After controlling for general cognitive ability, those with an internal work locus of control will perform significantly better in a multitasking situation than those with an external work locus of control.

**Multitasking Ability and the Five-Factor Model of Personality**

A study on personality predictors would not be complete without the inclusion of the “Big Five” (AKA the Five-Factor Model or FFM). The Big Five is made up of the five factors that adequately describe the domain of personality (Digman, 1990). There are many more specific dimensions of personality; however, extraversion, Conscientiousness, Neuroticism, Agreeableness, and Openness to Experience are widely held as the five most representative traits that underlie almost all other dimensions of personality (Conte & Gintoft, 2005; Goldberg, 1990). Extraversion refers to being sociable, ambitious, and excitement-seeking; Conscientiousness refers to being dependable, planful, and hardworking; Neuroticism refers to being emotionally unstable, anxious, hostile, and depressed. Agreeableness refers to being cooperative and trustful; Openness to Experience, also known as intellectance, refers to being creative and broad-minded (Barrick, Mount, & Judge, 2001).
Research on extraversion has demonstrated that extraverts prefer stimulating and arousing situations (Matthews, Davies, & Lees, 1990; Matthews, Jones, & Chamberlain, 1989). Introverts, on the other hand, would likely feel less comfortable and more stressed in highly arousing situations. The increased anxiety that introverts would be expected to experience in a situation that demands multitasking would likely impair their performance. Extraverts, on the other hand, would not have that extra feeling of anxiety, so they would likely perform better. Therefore, the following hypothesis is proposed:

- **Hypothesis 3:** After controlling for general cognitive ability and work locus of control, extraversion will significantly and positively correlate with multitasking performance.

Conscientiousness is another factor in the Big-5 that has received attention in multitasking research. Research has consistently demonstrated a positive significant relationship between conscientiousness and job performance across all sorts of occupations (Barrick & Mount, 1991; Salgado, 1997). When faced with a difficult, anxiety-provoking situation, conscientious individuals are likely to work harder and be more persistent than individuals who are not conscientious. This theoretical link drives the following hypothesis:

- **Hypothesis 4:** After controlling for general cognitive ability, conscientiousness will significantly and positively correlate with multitasking performance.

Kinney (2007) is the only study that has analyzed the relationship between openness to experience and multitasking performance. The researcher found a positive relationship and attributed the significance to open individuals’ high need for change (Barrick & Mount, 1991; Mount & Barrick, 1995) and their behavioral flexibility (McCrae, 1996). Kinney’s (2007) finding is expected to replicated, therefore, the following hypothesis is proposed:

- **Hypothesis 5:** After controlling for general cognitive ability, openness to experience will significantly and positively correlate with multitasking performance.
In the next section, the literature on polychronicity, which is the second primary construct of the present paper, will be reviewed. Several main effect and interaction hypotheses involving the constructs discussed above will developed.

**POLYCHRONICITY**

Polychronicity was first introduced by anthropologist Edward T. Hall in 1959 (Hall, 1959). It has since evolved into a cultural and personality construct that describes (A) a culture or individual’s preference to perform multiple tasks simultaneously and (B) a belief that multitasking is the best way to work on tasks (Bluedorn, & Denhardt, 1988; Bluedorn, Kalliath, Strube, & Martin, 1999; Schell & Conte, 2008). The construct creates a distinction between two different ways people view and organize time. Those who prefer to work on one task at a time are considered monochronic, and those who prefer to work on multiple tasks at once are considered polychronic (Conte, Rizzuto, & Steiner, 1999). This distinction is applicable at a cultural level and at an individual level. A work team, an office, an organization, or a country are all examples of a culture, in this context. A culture’s level of polychronicity is measured by the polychronic norms within the culture. Individual level polychronicity is simply one’s personal polychronic disposition.

People generally demonstrate different degrees of polychronic behaviors. Therefore, it is suggested to think of people as falling along a continuum with monochronic tendencies on one end and polychronic tendencies on the other rather than classifying people as either monochronic or polychronic (Bluedorn, Kaufman, & Lane, 1992; Conte & Jacobs, 2003). A very polychronic individual would find it desirable to work on many tasks at once. On the other hand, a monochronic individual would prefer to engage in only one task at a time
(e.g., not beginning a new task until the previous task is completed). In addition to working on several tasks simultaneously, polychronic individuals believe that handling interruptions is the preferred way to work (Conte & Jacobs, 2003). Monochronic individuals would not agree with this belief since they do not want to be pulled away or distracted from the current task at hand.

To further define the construct, Bluedorn et al. (1999) explained that polychronic behavior can refer to two ways of multitasking. The first is performing multiple tasks simultaneously (i.e., dual tasking). An example of this would be jogging while listening to music. The second is performing several tasks within the same time period (i.e., task switching). To describe this second way to multitask, Bluedorn et al. (1999) gave the example of performing the tasks of a morning’s work. Some may argue that working on multiple tasks simultaneously is not the same as alternating between tasks and should not both be classified as polychronic behaviors. Slocombe and Bluedorn (1999) offered support to the view that polychronicity includes working on multiple tasks simultaneously and alternating between tasks by explaining that switching back and forth between tasks requires an individual to spend time paying attention to multiple tasks at once. The more an individual divides his or her attention, the more polychronic that person’s behavior is.

For several decades after Hall introduced polychronicity, little to no research was conducted on the construct. In the past several decades, however, a number of researchers have studied polychronicity. When a search for ‘polychronicity’ is performed in PsycInfo, 37 of the 38 studies that result were written between 1998 and today (the 38th study was published in 1979). The reason for this sudden influx is largely due to the changing nature of society and work. Most jobs today demand employees to be able to handle several tasks at
the same time (Bühner et al., 2006). Jobs have become far more complex over the years and employees today are being asked to do more in less time than ever before. To that end, organizations today value employees that can handle multiple demands and tasks at the same time. It is no surprise then why there has been an influx of publications on polychronicity because many applied psychologists are working to determine what constructs predict multitasking performance.

Several studies have been conducted to determine the validity of polychronicity as a personality construct. Conte et al. (1999) provided construct validity evidence of individual-level (as opposed to cultural-level) polychronicity. The researchers provided convergent and discriminant validity for the construct by using participants and their peers who have known each other for more than a year. Positive significant correlations were found between participants and peer raters on polychronicity agreement as well as two potentially related Type A behavior pattern subcomponents (achievement striving and impatience/irritability). Correlations between these two Type A behavior pattern subcomponents and polychronicity provided discriminant validity. Conte et al. (1999) provided further evidence of construct validity for polychronicity by correlating it with potentially related dimensions of time urgency, such as preference for organization, general hurry, time awareness, and scheduling. Conte and Jacobs (2003) determined that polychronicity accounts for unique variance beyond other personality constructs such as the Big-5, cognitive ability, and Type A behavior pattern subcomponents. Conte and Jacobs (2003) also confirmed Bluedorn’s (2002) finding that polychronicity is a stable personality construct through significant test-retest reliability results.
One purpose of the present study is to replicate some previous research and add to the nomological network of polychronicity. Researchers have found, and continue to find, several useful applications for the construct. Conte and Gintoft (2005) provided a thorough summary of the nomological network surrounding polychronicity. Some of the largest correlations were with schedules and deadlines ($r = -.31$; Benabou, 1999), punctuality values ($r = -.28$; Benabou, 1999), and absence ($r = .25$; Conte & Jacobs, 2003). Results have been consistent in showing that polychronic individuals tend to demonstrate less punctuality and follow schedules less closely (Conte & Jacobs, 2003). Monochronics, on the other hand, typically are more punctual, better at meeting deadlines, and are better suited in situations where scheduling is essential (Conte & Jacobs, 2003).

Though polychronicity is generally correlated with some less attractive traits, it should not be considered unwanted by all since it also correlates with several desirable outcomes. For example, when individual level polychronicity is congruent with organizational polychronicity norms, polychronicity correlates with willingness to exert effort ($r = .22$), desire to remain a member in the organization (.19), and a belief in and acceptance of the organization’s goals ($r = .13$) (Slocombe & Bluedorn, 1999). Kaufman, Lane, and Lindquist (1991) also studied the benefits of congruence between a person’s level of polychronicity and the environment. Kaufman et al. (1991) determined that the feeling of being overloaded with work is negatively correlated to polychronicity. In other words, when given a lot of work, polychronic individuals respond better than monochronic individuals in the same situation. Part of the definition of polychronicity is the belief that multitasking is superior to doing one task at a time. It is important to find congruity in polychronicity.
between an individual and his or her environment because it can have implications on production, effectiveness and efficiency (Kaufman et al., 1991).

Polychronicity has also been found to correlate with several desirable traits. Conte et al. (1999) demonstrated that polychronicity is significantly correlated with two Type A behavior pattern subcomponents, which most would agree are desirable. One subcomponent is achievement striving \( (r = .18) \) and the other is patience/irritability \( (r = .18) \). Polychronicity is also significantly correlated with extraversion (Conte & Jacobs, 2003). This finding has implications for jobs that require employees to be outgoing. Conte and Gintoft (2005) analyzed polychronicity and several other personality traits in retail sales employees. The researchers found that polychronicity was significantly correlated to customer service \( (r = .22) \), sales performance \( (r = .22) \), and overall job performance \( (r = .23) \) among retail sales employees. Arndt, Arnold, and Landry (2006) also analyzed polychronicity in retail employees and found that polychronicity significantly correlated with performance \( (r = .17) \) and job satisfaction \( (r = .39) \). This should come as no surprise since successful retail sales employees are typically extraverted individuals.

Conte and Jacobs (2003) correlated polychronicity with train operator job performance, absence, and lateness in addition to several other generally undesirable variables. Consistent with the theory, the authors determined that polychronic train operators were absent and late more often and that they also received lower job performance ratings. The appropriate conclusion to draw from this study and those mentioned earlier is that polychronic individuals and monochronic individuals can both thrive depending on the organization and/or job. As a construct, polychronicity can be desirable or undesirable, but it depends on the situation.
Polychronicity and Multitasking Ability

Although one would assume that polychronicity would be a significant predictor of multitasking performance, research on the relationship has thus far been inconclusive. Some studies say there is no relationship (Ishizaka et al., 2001; König et al., 2005), others say there is a significant relationship (Kinney, 2007; Zhang et al., 2005). Though there is only a small volume of empirical evidence on this relationship, the fact that there has not been a consistent finding likely means that the relationship between multitasking performance and polychronicity is not very strong. However, given the strong theoretical arguments for why the two should relate, further research should be conducted to reexamine this relationship, which is one purpose of the present study.

Research on person-job fit provides a strong theory for why polychronicity should relate to multitasking performance. Kaufman et al. (1991) discussed the benefits of congruence between a person’s level of polychronicity and the environment. The authors reasoned that the feeling of being overloaded with work should correlate negatively to polychronicity. In other words, when assigned many tasks to complete, polychronic individuals respond better since they are not as stressed as monochronic individuals would be. Part of the definition of polychronicity is the belief that multitasking is superior to doing one task at a time. The researchers proposed that finding congruity in polychronicity between an individual and his or her environment can have implications on production, effectiveness and efficiency (Kaufman et al., 1991). Along the same line of research, Kaufman-Scarborough and Lindquist (1999) argued that an environment filled with change would induce more stress, since it would require some degree of multitasking, and that polychronic individuals would be less stressed in such an environment. The researchers demonstrated
empirically that polychronic individuals were indeed more accepting and comfortable with change (Kaufman-Scarborough & Lindquist, 1999).

The idea that stress brought upon by an unfamiliar or uncomfortable situation may impact one’s performance in a multitasking situation was also discussed by Delbridge (2000) and Kinney (2009) in terms of stress tolerance. The researchers both indicated that the literature on stress shows that stress tolerant individuals can better manage the feeling of urgency due to the time pressures experienced in a multitasking situation. Theoretically, based on Kaufman-Scarborough & Lindquist’s (1999) research, it seems that people that prefer to multitask (i.e., polychronics) would experience less stress than those that do not prefer to multitask (i.e., monochronics), and considering the literature on stress tolerance, this reduced amount of stress should lead to better performance. From these theories the following hypothesis is proposed:

- Hypothesis 6: After controlling for general cognitive ability, polychronicity will significantly and positively correlate with multitasking performance.

**Polychronicity and General Cognitive Ability**

Conceptually, polychronicity and general cognitive ability do not seem to be theoretically linked. Conte and Jacobs (2003) recognized that a relationship between the two may not exist, but found a significant .15 correlation. This was true for a sample of train operators and a student sample. To strengthen the understanding of the nomological network surrounding polychronicity, this relationship will be revisited, though no formal hypothesis will be proposed. Though there may not be a significant bivariate relationship between polychronicity and general cognitive ability, the two constructs may interact in their prediction of multitasking ability. It seems logical that the stronger people are in their
cognitive abilities, the better that their multitasking performance will be when they also prefer to multitask. Again, considering Kaufman-Scarborough and Lindquist’s (1999) idea of feeling less comfortable and more stressed in a multitasking situation when it does not fit one’s polychronic preference, the following hypothesis is proposed:

- **Hypothesis 7:** Cognitive ability will moderate the relationship between polychronicity and multitasking performance such that polychronics with higher levels of cognitive ability will multitask significantly better than polychronics with lower levels of cognitive ability.

**Polychronicity and Work Locus of Control**

Although there does not seem to be a strong theoretical link between work locus of control and polychronicity, it is possible that polychronicity may moderate the relationship between work locus of control and multitasking ability. Assuming that polychronicity is positively correlated with multitasking ability, it would seem logical that internals who prefer to multitask would perform better in a multitasking situation than internals who does not prefer to multitask. This is because those who prefer to multitask will feel more comfortable, less stressed, and less overwhelmed by a highly stimulating situation (Kaufman-Scarborough & Lindquist, 1999). Furthermore, externals who prefer to multitask may feel less overwhelmed by a multitasking situation than externals that do not prefer to multitask because they too may feel more comfortable or familiar in such a situation. Therefore, the following hypothesis is proposed

- **Hypothesis 8:** After controlling for general cognitive ability, work locus of control will significantly moderate the relationship between polychronicity and multitasking performance such that polychronics with an internal locus of control will multitask significantly better than polychronics with an external locus of control.
Polychronicity and the Five-Factor Model of Personality

In the multitasking research context, extraversion has received the most attention of the five dimensions in the FFM (Kinney, 2007). The theory linking these two constructs is similar to that of the link between multitasking ability and extraversion described above. Theoretically, it seems that extraverts should be more comfortable in and prefer situations that demand multitasking since doing so increases individuals’ levels of arousal. Conte and Jacobs (2003) and Conte and Gintoft (2005) demonstrated that there is a consistent link tying together extraversion and polychronicity by finding a significant, positive relationship between the two constructs (correlations were .21 and .22, respectively). This result is expected to be replicated and, therefore, the following hypothesis is proposed:

- Hypothesis 9: Extraversion will significantly and positively correlate with polychronicity.

Again, using the idea that individuals who experience less stress will perform better in a multitasking situation, it seems likely that extraversion and polychronicity may interact with one another when predicting multitasking performance. It is logical to expect that extraverted individuals who prefer to multitask may experience less anxiety than introverted individuals who do not prefer to multitask. Therefore, the following hypothesis is proposed:

- Hypothesis 10: After controlling for general cognitive ability, extraversion will significantly moderate the relationship between polychronicity and multitasking performance such that extraverted polychronics will multitask better than introverted polychronics.

The personality trait of conscientiousness has been found to have a significant (negative) relationship with polychronicity (Conte & Jacobs, 2003). This was consistent with Hall and Hall’s (1990) observation that monochronic individuals are more organized than
polychronic individuals. Conscientious individuals are purposeful, determined, and reliable. These traits conflict with those used by Hall to describe polychronic individuals, “who often do not adhere to schedules, appointments, delivery dates, or deadlines” (Conte & Jacobs, 2003, p. 124). The following hypothesis is proposed:

- Hypothesis 11: Conscientiousness will significantly and negatively correlate with polychronicity.

There does not appear to be a strong theoretical link between the three other personality traits in the FFM and polychronicity, therefore no further formal hypothesis will be proposed. Nevertheless, openness to experience, neuroticism, and agreeableness will be measured and included in the analyses with the other constructs in the study.

**Stress Tolerance**

Many of the hypothesized relationships regarding multitasking ability have derived from the idea that stress will affect performance and that several predictors will mitigate the stress an individual experiences. For example, polychronicity is predicted to significantly and positively relate to multitasking performance because polychrons will not feel as stressed as monochrons when placed in a situation that requires them to multitask. For this reason, the present study will examine stress tolerance as an exploratory variable in search of possible main, moderating, and mediating effects.
**METHOD**

To examine the hypothesized relationships proposed above, the present study utilized a battery of self-report personality inventories, a cognitive ability test, and a computer based multitasking performance assessment. Descriptions of the participants, procedure, and details of the measures used are provided below.

**PARTICIPANTS**

A statistical power analysis (Cohen, 1992) was performed at the .80 power level to determine the appropriate number of participants needed to achieve statistically significant relationships ($\alpha < .05$) between the constructs of interest. A review of the literature for the present study’s primary constructs of interest (i.e., multitasking performance and polychronicity) revealed a wide range of correlations with other variables. Before reviewing these relationships, however, the effects of two control variables on statistical power will be assessed.

As discussed earlier, general cognitive ability functioned as a control variable for hypotheses where multitasking performance is the dependent variable. Although the literature has demonstrated a consistent relationship between cognitive ability and multitasking performance, most studies have examined the relationship using a variety of tests that measure specific dimensions of cognitive ability. For example, Kinney (2007) used a basic skills test that measured reading comprehension, which had a .67 correlation with multitasking performance. König et al. (2005) used both a working memory test that measured reading span, spatial coordination, and a numerical switching measure that
required participants to alternate counting the number of digits and reading the digits displayed on a screen. The researchers found a significant .44 correlation between the number of questions answered correctly on their multitasking test and their measure of working memory. The same researchers also measured cognitive ability by using a fluid intelligence test that included analogies, number series, and matrix subtests. A significant .31 correlation between fluid intelligence and multitasking performance was found. Considering these coefficients, it appears that there is a moderate to moderately strong relationship between general cognitive ability and multitasking performance.

According to Cohen’s (1992) $R^2$ effect size guidelines, a moderately strong relationship would mean that approximately 20% of the variance in a relationship is explained. Therefore, 20% will be the amount of variance estimated to be controlled for by general cognitive ability.

Reviewing the literature on relationships between the personality predictors in the present study and multitasking performance, effect sizes are typically weak. Delbridge (2000) and Kinney (2007) examined the relationships between the Big 5 personality traits and multitasking performance and found weak relationships (according to Cohen’s guidelines). Kinney (2009) found a weak relationship between work locus of control and multitasking performance. Also, as discussed earlier, researchers have only found a weak relationship (if any at all) between polychronicity and multitasking performance. Kinney (2007) is one researcher that found a significant relationship and observed a .13 correlation. Being one of the primary constructs of interest in the present study, the effect size for the relationship between polychronicity and multitasking performance (which is similar in magnitude to the other significant relationships of personality predictors with multitasking
performance) will be used for the present power analysis. Using a population effect size of 
\( R^2 = .017 \cdot (.13^2) \), a power level of .80, controlling for 20% of the variance in multitasking performance (by including general cognitive ability in the regression models), and an \( \alpha = .05 \) required a sample size of approximately 350 participants.

For hypotheses where polychronicity is the dependent variable, another power analysis was performed. Conte and Jacobs (2003) observed a .15 correlation between cognitive ability and polychronicity, a .21 correlation between extraversion and polychronicity, and a -.15 correlation between conscientiousness and polychronicity. Using the most conservative population effect size, \( R^2 = .02 \cdot (.15^2) \), a power level of .80, and an \( \alpha = .05 \) also required a sample of approximately 350 participants.

**Sample**

Participants were undergraduate psychology students from a large Southwestern university. Although the power analysis described above indicated a recommended sample size of 350 participants, data from only 161 participants could be collected. The mean age was 21.39 years old with a standard deviation of 4.389. In terms of gender, 32.3% of the sample was male and 65.2% was female (2.5% declined to state). With regard to race, the sample was 20.5% Asian/Pacific Islander, 3.8% Black, 26.3% Hispanic, 0.6% Native American, 42.9% White, and 5.1% other.

Participants were recruited using two different methods. The first method participants were recruited was by using an online research participation pool website sponsored by the psychology department. The website allows students to view research studies in progress and sign up to participate in them. Following Institutional Review Board (IRB) approval,
participants recruited via this method were given course credit in their introductory psychology classes after participating in the present study. The researcher also recruited participants by contacting several undergraduate psychology professors who agreed to offer extra credit to students who volunteered to participate. Volunteers contacted the researcher via email to reserve a seat in one of the scheduled sessions.

**Measures**

Participants were asked to complete a battery of assessments. Included in the battery were a cognitive ability test, an online multitasking assessment, and several online and paper and pencil based self-report personality inventories.

**General Cognitive Ability**

Cognitive ability was measured using a 50-item paper and pencil based assessment called the Wonderlic Personnel Test-Revised (WPT-R). The WPT-R is a timed 12-minute test in which test-takers must answer as many questions as possible without using a calculator. Alpha internal consistency reliabilities range from .73 to .95. Test-retest reliability estimates range from .82 to .94. Since the WPT-R is a proprietary measure developed by Wonderlic, Inc., it could not be included in the appendices.

**Polychronicity**

Polychronicity was measured using the Inventory of Polychronic Values (IPV; Bluedorn et al., 1999). The IPV is a self-report 10-item Likert scale inventory. Participants ranked to what extent they agree each item on a scale from 1 to 7. Examples of items in the IPV are, “I like to juggle several activities at the same time,” “I am comfortable doing several things at the same time,” and “I believe people do their best work when they have many tasks
to do.” Higher scores on the IPV indicated that participants were more polychronic. Items in the full-length measure can be seen in Appendix A.

The IPV was originally developed to measure group levels of polychronicity, and therefore the items initially included plural pronouns such as ‘we’ and ‘ourselves.’ Since the present study is concerned with the individual level of analysis, items were modified to measure individual preferences to multitask. For example, item 4, which originally was “When we work by ourselves, we usually work on one task at a time,” was modified to “When I work by myself, I usually work on one task at a time.” Bluedorn et al. (1999) explained that modifying the scale to measure the individual level, rather than the group level, does not make it any less valid or reliable. Bluedon et al. (1999) reported an alpha reliability coefficient of .86, a test-retest reliability of .78 after four weeks and .95 after an immediate retest. It is worth noting that several items, such as “I prefer to do one thing at a time,” required reverse coding. To that end, higher total scores indicated a polychronic orientation and lower scores indicated a monochronic orientation.

The IPV was converted from a paper and pencil based assessment to an online format. Research has shown that Internet-based measures are comparable to paper-and pencil-based versions of the same measures (Meade, Michels, & Lautenschlager, 2007). Therefore, the online version of the IPV is not expected to be less valid or reliable than the paper based form.

Work Locus of Control

A 16-item work specific measure of locus of control developed by Spector (1988) was used in the present study. Examples of items are, “A job is what you make of it,”
“Getting the job you want is mostly a matter of luck,” and “It takes a lot of luck to be an outstanding employee on most jobs.” Similar to the IPV, several items, such as “A job is what you make of it,” required reverse coding. Lower total scale scores indicated internality and higher total scores indicated externality. Items in the full-length measure can be seen in Appendix B.

Spector (1988) used 6 samples in his study and reported alpha reliability coefficients ranging from .75 to .85, with 4 of the samples yielding alphas of .85. Like the IPV, the work locus of control measure was also converted into an online format, which also was not expected to impact the validity or reliability of the scale.

**Stress Tolerance**

A 6-item stress tolerance measures with an internal consistency reliability estimate of .74 was also used. This measure is also proprietary and, therefore, cannot be included in the Appendix. The measure was also converted into an online format.

**Multitasking Ability**

Participants’ ability to multitask was measured using a proprietary online multitasking assessment designed by Previsor, which is a personnel selection consulting firm. The assessment is a 20-minute timed, split screen, work relevant simulation that requires participants to attend to two tasks simultaneously while maintaining efficiency and effectiveness when interrupted and switching between tasks. One task is a problem solving assessment. On one side of the screen participants were presented 20 multiple-choice deductive reasoning problems, each 5 response options. Each question is presented for 60 seconds before the test automatically advances to the next question. Scoring for this part
of the assessment is as follows: 1 point for correct a correct response, 0 points for skipping a question, -.5 points for an incorrect response, and -1 point for not answering a question or skipping a question by clicking the “skip” button. The second task is an information retrieval assessment. On the other side of the screen participants were presented 75 emails in 15 second intervals. Fifty seven emails are for-information-only and 18 emails require a response. The emails requiring responses present questions in a multiple choice format with five response options. Emails are available for viewing for 60 seconds, after which time they cannot be viewed. A warning is given 15 seconds prior to when an email is set to expire. Scoring for this portion of the test is based on opening and correctly responding to the email questions. Participants are penalized for not opening emails that require responses, but partial credit is given for either opening an email or opening but incorrectly responding to a question. Scoring is as follows: 1 point for correctly answering an email question, 0 points for incorrectly answering an email question, -.75 point for opening an email but not responding to it (when a response was required), and -1 point for not opening an email. Scores on the assessment are based on the ability to quickly and accurately process information in both tasks within the same time period. Scores from both tasks are combined and weighted to produce an overall score which is transformed into a percentile rank

**Five-Factor Model**

Conscientiousness, extraversion, openness to experience, emotional stability, and agreeableness were measured using the Personal Characteristics Inventory (PCI). The 150-item paper and pencil based measure is also a proprietary measure developed by Wonderlic, Inc. and therefore could not be included in the appendices. Items on this measure were rated
on a 1 to 3 scale where 1 indicates agreement with a statement and 3 indicates disagreement with a statement. Higher scores on each subscale indicated higher levels of each trait. Wonderlic, Inc. reported internal consistency reliability estimates for the PCI subscales of .87 (for conscientiousness), .86 (for extraversion), .86 (for openness to experience), .87 (for emotional stability), and .82 (for agreeableness).

**PROCEDURE**

Participants entered a computer lab on a college campus where they checked in with the researcher. Participants were given identification numbers and log-in information to fill out the identification sections of the paper and pencil based assessments and to access the online assessments. Participants’ were instructed to only provide their identification numbers and not their names. This identification and log-in information allowed the researcher to track and merge scores across assessments while also protecting participants’ anonymity. Along with their identification numbers and log-in information, participants were given step-by-step instructions that explained how to access each tests and in the appropriate order (Appendix C).

After participants checked in, they were first given the cognitive ability assessment. The assessment is a timed 12-minute measure, so all participants were instructed to begin and end at the same time. Upon completion of the first assessment, participants were told to follow the instructions to access the remainder of the battery. The next assessment was an untimed online questionnaire, which developed by the researcher using an online survey service. This online survey was composed of the polychronicity, work locus of control, and stress tolerance measures, respectively. Demographic information including age, race, and
gender was also collected in this portion of the battery. Next, participants took the 20-minute online multitasking ability assessment. Immediately following the multitasking assessment was an online additional deductive reasoning test. This 25-minute deductive reasoning test was included for validation purposes and its results were not used in the present study. After completing these online assessments, participants were given the un-timed paper and pencil based five-factor model inventory. The battery of assessments took approximately 90 to 120 minutes to complete. No participants spent more than 120 minutes to complete the battery. Fifteen minute intervals between data collection sessions were used.

After completing the data collection phase, a debriefing statement was sent out via email to every individual that participated. This statement can be seen in Appendix D.
RESULTS

Means, standard deviations, correlations, and reliabilities for all variables in the present study can be seen in Table 2. All correlational and regression analyses discussed below used an alpha significance level of .05. Figure 1 visually displays hypotheses where multitasking ability was the dependent variable, Figure 2 visually displays hypotheses where polychronicity was the dependent variable, and Figure 3 visually displays all interaction hypotheses.

TESTS OF HYPOTHESES

A bivariate correlational analysis was used to test hypothesis 1, which stated that general cognitive ability will significantly and positively correlate with multitasking ability. A positive correlation was observed (r = .49, p < .01), which supported hypothesis 1.

Multiple linear regression analyses were conducted to test hypotheses 2 through 6. Hypothesis 2 stated that after controlling for general cognitive ability, those with an internal work locus of control will perform significantly better in a multitasking situation than those with an external work locus of control. Work locus of control did not significantly predict multitasking ability, $F(1, 155) = .601, p = .44$. Therefore, hypothesis 2 was not supported.

Hypothesis 3 stated that after controlling for general cognitive ability, extraversion will significantly and positively correlate with multitasking ability. Extraversion did not significantly predict multitasking ability, $F(1, 155) = .31, p = .58$. Therefore, hypothesis 3 was not supported. Hypothesis 4 stated that after controlling for general cognitive ability,
Table 2. Means, Standard Deviations, and Alpha Reliabilities

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<td></td>
</tr>
<tr>
<td>7. WLOC</td>
<td>2.72</td>
<td>.64</td>
<td>-.11</td>
<td>-.25**</td>
<td>-.20*</td>
<td>-.10</td>
<td>-.03</td>
<td>-.12</td>
<td>(.78)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Stress</td>
<td>3.97</td>
<td>1.00</td>
<td>.06</td>
<td>.06</td>
<td>.55**</td>
<td>.42**</td>
<td>.36**</td>
<td>.13</td>
<td>-.08</td>
<td>(.70)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Multi</td>
<td>5.15</td>
<td>14.65</td>
<td>.04</td>
<td>.01</td>
<td>-.12</td>
<td>-.02</td>
<td>-.02</td>
<td>.09</td>
<td>.02</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Cog</td>
<td>20.31</td>
<td>4.68</td>
<td>.21**</td>
<td>.18*</td>
<td>.07</td>
<td>.03</td>
<td>.04</td>
<td>-.05</td>
<td>.08</td>
<td>.11</td>
<td>.45**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Age</td>
<td>21.40</td>
<td>4.40</td>
<td>-.05</td>
<td>.13</td>
<td>.27**</td>
<td>.06</td>
<td>.20*</td>
<td>.24**</td>
<td>-.11</td>
<td>.14</td>
<td>-.22**</td>
<td>-.05</td>
<td></td>
</tr>
</tbody>
</table>

Figure 1. Partial correlations of predictors with multitasking ability. Note: a. \( p = .06 \).

Figure 2. Zero-order correlations of predictors with polychronicity. Note: ** = \( p < .01 \).
conscientiousness will significantly and positively correlate with multitasking ability.

Conscientiousness did not significantly predict multitasking ability, $F(1, 155) = 1.75, p = .19$.

Hypothesis 4 was, therefore, not supported. Hypothesis 5 stated that after controlling for general cognitive ability, openness to experience will significantly and positively correlate with multitasking ability. Openness to experience was found to be a marginally significant predictor of multitasking ability, $\beta = -.13, F(1, 155) = 3.64, p = .06$ (Table 3). However, the direction of effect was opposite the hypothesized direction. Contrary to expectation, the result suggests that as openness to experience increases, one’s ability to multitask decreases.

Therefore, hypothesis 5 was not supported. Hypothesis 6 stated that after controlling for
Table 3. Hypothesis 4 Regression Analysis

<table>
<thead>
<tr>
<th>Predictors</th>
<th>β</th>
<th>p</th>
<th>ΔR²</th>
<th>Total R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General cognitive ability</td>
<td>.49</td>
<td>p &lt; .01</td>
<td>.24</td>
<td>.24</td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General cognitive ability</td>
<td>.50</td>
<td>p &lt; .01</td>
<td>.02</td>
<td>.26</td>
</tr>
<tr>
<td>Openness</td>
<td>-.13</td>
<td>p = .06</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

general cognitive ability, polychronicity will significantly and positively correlate with multitasking ability. Polychronicity was not significantly related to multitasking ability, $F(1, 155) = .01, p = .99$. Therefore, hypothesis 6 was not supported.

Moderated multiple regression analyses were conducted for hypotheses 7 and 8. Hypothesis 7 stated that general cognitive ability will moderate the relationship between polychronicity and multitasking performance. The interaction between general cognitive ability and polychronicity was not significant, $F(1,154) = .21, p = .65$. Therefore, hypothesis 7 was not supported. Hypothesis 8 stated that after controlling for general cognitive ability, work locus of control will significantly moderate the relationship between polychronicity and multitasking performance. The interaction between work locus of control and polychronicity was not significant, $F(1, 154) = 1.02, p = .31$. Therefore, hypothesis 8 was not supported.

Hypothesis 9 stated that extraversion will significantly and positively correlate with polychronicity. This hypothesis, like hypothesis 1, was tested using a bivariate correlational analysis. A positive correlation between extraversion and polychronicity was observed
(r = .21, p < .01), which supported hypothesis 9. A moderated multiple regression analysis was performed to determine if extraversion and polychronicity interact to predict multitasking ability after controlling for general cognitive ability, which is what hypothesis 10 stated. The interaction between extraversion and polychronicity was not significant, $F(1, 153) = .46, p = .52$. Therefore, hypothesis 10 was not supported.

Hypothesis 11 stated that conscientiousness will significantly and negatively correlate with polychronicity. This hypothesis was also tested using a bivariate correlational analysis. Conscientiousness was not found to be significantly correlated with polychronicity (r = -.01). Therefore, hypothesis 11 was not supported.

**EXPLORATORY ANALYSES**

In addition to testing the 11 hypotheses above, stress tolerance was tested as an exploratory variable for models predicting multitasking ability and polychronicity. Stress tolerance was not found to correlate with either of these variables and did not interact with any of the variables when predicting multitasking ability or polychronicity.

Several demographic variables were observed to have an effect on multitasking ability and polychronicity. Bivariate correlational analyses demonstrated that age was negatively correlated with multitasking ability ($r = -.22, R^2 = .05, p < .01$) and positively correlated with polychronicity ($r = .24, p < .01$). Unlike the former relationship, the latter finding was unexpected and inconsistent with previous research on polychronicity (Conte & Gintoft, 2005; Kinney, 2007). Unlike the field samples in previous studies that were used to analyze polychronicity, the sample in the present study had a highly positively skewed distribution of age in the sample. Therefore, it is very likely that this significant relationship between polychronicity and age was due to range enhancement (also known as reverse range
restriction; Hunter & Schmidt, 1990). Since approximately 95% of the sample was between the ages of 18 and 30, it was decided to re-analyze the correlation between polychronicity and age for this age range. As expected, the correlations for these age groups were both found to be non-significant \((r = .12, p > .05, \text{ and } r = .14, p > .05)\). Therefore, it is highly likely that this relationship was due to the positively skewed sample and not to an actual relationship between the two constructs. To ensure the stability of the relationship between multitasking ability and age, another correlation analysis was performed using the same subset of participants. Results indicated that this correlation remained significant \((r = -.29, p < .01)\).

Considering the evidence that across almost all cognitive ability tests African-Americans and Hispanics score lower than Caucasians (Philippe & Jensen, 2005), there was a priori reason to believe that a similar pattern of results would be observed in the present study. Two independent samples \(t\)-tests using Bonferroni’s adjustment were performed to determine if there were significant mean differences between Caucasians and each of these two minority groups. The results were consistent with previous research and indicated that Caucasians were found to score significantly higher than African-Americans, \(t(69) = 2.46, p .02, \text{ and Hispanics, } t(104) = 2.48, p = .02\). Results of these \(t\)-tests are summarized in Tables 4 and 5, respectively.
Table 4. Multitasking Performance Means for Caucasians and African-Americans

<table>
<thead>
<tr>
<th>Race</th>
<th>Caucasian</th>
<th>African-American</th>
<th>t</th>
<th>df</th>
<th>p</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caucasian</td>
<td>9.29</td>
<td>-5.86</td>
<td>2.46</td>
<td>69</td>
<td>0.02</td>
<td>1.07</td>
</tr>
<tr>
<td>(14.51)</td>
<td>(-13.59)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note:* Critical $p$-value was set to .025 by using Bonferroni’s adjustment. Standard deviations appear in parentheses below means.

Table 5. Multitasking Performance Means for Caucasians and Hispanics

<table>
<thead>
<tr>
<th>Race</th>
<th>Caucasian</th>
<th>Hispanic</th>
<th>t</th>
<th>df</th>
<th>p</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caucasian</td>
<td>9.29</td>
<td>2.1</td>
<td>2.48</td>
<td>104</td>
<td>0.02</td>
<td>0.49</td>
</tr>
<tr>
<td>(14.51)</td>
<td>(-14.6)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note:* Critical $p$-value was set to .025 by using Bonferroni’s adjustment. Standard deviations appear in parentheses below means.
DISCUSSION

There were two primary purposes of the present study. The first purpose was to inquire about what individual difference variables predict multitasking performance. The second purpose was to build on the nomological network of polychronicity. The set of variables used in this study included six personality variables (polychronicity, work locus of control, extraversion, conscientiousness, openness to experience, and stress tolerance) and two ability variables (multitasking ability and cognitive ability).

Research on multitasking consistently demonstrates that general cognitive ability predicts multitasking ability (Fogarty & Stankov, 1988; Kinney, 2007; Roberts et al., 1988; Stankov, 1988, 1989). The present study reaffirmed this finding using a novel multitasking measure that was developed to provide more external validity in the workplace than previous measures of multitasking ability. The strong relationship between these two constructs may beg the question whether multitasking ability is a dramatically different construct than general cognitive ability. The correlation ($r = .49$) between these two constructs is not large enough to conclude that they are one in the same, however, considering the widely accepted Three Stratum Theory of Intelligence (Carroll, 1993), it seems that there may be considerable overlap between the components that make up intelligence and those that make up multitasking ability. Using Carroll’s (1993) theory, it is possible that multitasking ability is an amalgamation of some of the sub-components of the model, such as, for example, fluid intelligence, broad visual perception, and broad cognitive speediness. Implications of this relationship will be discussed later.
Contrary to expectations, polychronicity was not found to be a predictor of multitasking ability. There were no significant main or interaction effects of polychronicity on multitasking ability. This finding is consistent with previous research by Ishizaka et al. (2001) and König et al. (2005). Although there is sound theoretical reason why polychronicity should predict multitasking ability, the empirical evidence indicates otherwise. The argument for why these constructs should relate to one another stems from the idea that individuals who prefer to multitask and believe multitasking is the best way to complete a task (i.e., polychronic) should be more comfortable and less stressed when in an environment that requires them to multitask (Kaufman et al., 1991). For polychronics, this level of comfort was proposed to mitigate (and for monochronics, exacerbate) the anxiety provoked by a multitasking situation that, by its nature, is stimulating and challenging. The lack of a significant relationship between these two constructs suggests that this logic may not hold. Further evidence refuting the theoretical link was the fact that stress tolerance also did not significantly predict multitasking performance.

There are three possible explanations for the lack of a significant link between multitasking ability and polychronicity. First, assuming that Kaufman et al. (1991) proposition that congruence between one’s level of polychronicity and environment will result in better performance is valid, it is possible that the situation participants were placed into in the present study was different than the type of environment proposed by the researchers. In their paper, the authors described congruence between individuals’ time style and their respective organizations’ time styles. Perhaps an organization’s time style is a more macro level construct that cannot be captured by a single measure of multitasking ability. If this is the case, then polychronicity may only be predictive in the context of a larger work
environment and not a single situation. Research by Slocombe and Bluedorn (1999) may lend some support to this claim. The researchers found that employees’ performance increased when there was congruence between their levels of polychronicity and those of their coworkers and supervisors. The authors argue that the polychronic preferences of coworkers and supervisors create a work environment or culture that is characterized by demands placed on employees to multitask. It is possible that if there is a link between polychronicity and multitasking performance, it may only manifest itself in a larger work environment.

A second possible explanation (which is not necessarily mutually exclusive from the first) for the lack of a significant relationship between multitasking performance and polychronicity is that perhaps the situation participants were placed into was simply not anxiety provoking. While stimulating and challenging, it is possible that the multitasking assessment itself may not have significantly raised the stress levels for those who took it. Furthermore, there was no penalty for performing poorly on the multitasking assessment. Typically, in an organization, when individuals perform poorly they may be given a negative performance review, reprehension, or even be laid off. It may be the fear of negative consequences after not performing well on a task that incites anxiety and not the task itself. This line of thinking may also explain the non-significant relationships between work locus of control, conscientiousness, and extraversion. These variables were predicted to predict multitasking performance based on the anxiety that the multitasking assessment would induce. If the participants did not experience an increase in stress during the assessment, then their personality traits that were predicted to give them an advantage on the multitasking measure were not tapped.
A final explanation for why polychronicity did not predict multitasking ability is simple; it could very well be the case that merely because an individual likes to multitask does not make him or her better at multitasking. The evidence demonstrating that cognitive ability is a strong predictor of multitasking ability offers further support for this claim. There are components of cognitive ability that are inherent and cannot be improved regardless of how badly someone would like to. Even with training and practice, individuals may only be able to increase their cognitive ability slightly, if at all. It may be that some individuals have the cognitive ability to be strong multitaskers, and others do not. As an analogy, one may want to be a world-class Opera singer, but if that individual is tone deaf, it is unlikely that he or she will succeed.

Another finding worth discussing is the significant effect of openness to experience on multitasking performance. Contrary to expectation, the direction of this effect was opposite the hypothesized direction. Rather than positively predicting multitasking performance, openness to experience had a negative relationship, such that those who were closed to new experiences multitasked better. The theoretical link behind the positive relationship between these variables comes from the idea that individuals high in intellectance have a high need for change (Barrick & Mount, 1991; Mount & Barrick, 1995) and are flexible in their behaviors (McCrae, 1996). The results from the present study indicate that these facets of openness did not function to improve participants multitasking performance. Rather, it was closeness to experience, which is characterized by individuals’ preference for routines and traditional ways of performing tasks, that predicted better multitasking performance. It was expected that participants would perceive the multitasking assessment as novel and, as a result, those who liked new situations and experiences would
excel. One possible explanation of this finding could be that individuals who are curious, imaginative, and prefer variety (i.e., open to new experiences) can only utilize these skills to perform well when they are not overburdened with multiple tasks. Perhaps those that prefer structure and traditional ways of working are better multitaskers because they develop and utilize a routine and methodological approach that is conducive to better performance. Open individuals may only be able to utilize their imaginative ways of performing work when they can concentrate their efforts on one task at a time.

Consistent with previous research, extraversion was found to significantly correlate with polychronicity. This relationship has been observed consistently across studies (Conte & Jacobs, 2003) and the present study further established this relationship by replicating previous findings. The present study also failed to observe a significant (negative) relationship between conscientiousness and polychronicity. Although Conte and Jacobs (2003) found a significant correlation between these two constructs, their observed correlation was only .15. Being such a small correlation, it is possible that the present study simply did not have enough statistical power to detect this relationship.

In an exploratory analysis of demographic variables, age was found to negatively predict multitasking ability. Older participants did not multitask as well as younger participants. This finding is consistent with research by Salthouse, Fristoe, McGuthry, and Hambrick (1998) who demonstrated that multitasking performance declines with age. This finding may also be interpreted in terms of generational differences. Using qualitative methods, Gursoy, Maier, and Chi (2008) observed that younger individuals (Generation Y) were perceived to multitask better than older individuals (Baby Boomers and Generation X). Although there is very little academic work on generational differences, popular opinion is
that today’s younger generation (AKA the “MTV Generation”), having been raised in a highly technological environment, demand more change and simulation (Glass, 2007; Shaw & Fairhurst, 2008). Perhaps, the multitasking assessment came easier to younger participants since they were more accustomed to highly stimulating situations and environments. Ironically, although younger participants multitasked better, older participants scored higher on polychronicity. However, unlike the relationship between age and multitasking ability, this effect was likely due to range enhancement and should therefore not be given much weight.

The multitasking assessment in the present study yielded significant mean differences between racial groups, such that Caucasians scored significantly higher than African-Americans and Hispanics. This trend is similar to most general cognitive ability tests. Therefore, it appears that the multitasking measure does not eliminate racial group differences, which is reoccurring controversial issue among cognitive ability tests that are used to make selection decisions.

**LIMITATIONS**

As in any study, there were a number of limitations in the present one. The first, and most pervasive, was the small sample size. A power analysis conducted before collecting any data determined that the recommended sample size to achieve statistically significant results among the variables in the present was 350 participants. Unfortunately, time was a constraining factor that prevented the desired sample size from being reached. Instead of 350 participants, the present study’s sample size was 161. Having fallen short by almost 200 participants, it is no surprise that most of the hypothesized relationships were not significant. Though a larger sample size may have made it possible to detect significant relationships not
observed with a sample size of 161, it is worth noting that the effect sizes would likely be quite small, which is often the case in personality research in applied psychology. With particularly small effect sizes, the question of determining what is statistically significant and what is practically significant is often raised. In the present study, it seems that even if a significant relationship between polychronicity and multitasking ability was observed, the effect size would probably have been too small to offer any practical gain in explaining variation in multitasking ability.

Another important limitation in this study is its external validity. Since the sample was composed of undergraduate psychology students, it is possible that that sample does not accurately represent the general population of employees in the workplace. Another concern is the fact that the data was collected in a lab setting. Lab studies are hailed for their controlled environments, however This may be particularly true in the present study because participants were not punished for performing poorly on their assigned tasks. This is quite contrary he workplace where if an employee performs poorly, a number of negative consequences may follow. It is possible that the present study did not induce the same type of stress that employees would experience after being given a work-related task.

Another potential limitation may be participant fatigue. The battery of assessments took participants between an hour and half to two hours to complete. Although the assessment battery was designed so that participants were given the cognitively demanding measures first, it is possible that participants exerted less effort (willingly or unwillingly) in the latter assessments due to fatigue. Assuming that fatigue was a factor, the validity of the relationships and the reliability of the measures may have been weakened.
One final limitation may be that order effects had an influence on the results. The order of the assessments in the battery was the same for all participants. This was done intentionally for several reasons. The WPT-R was administered first because it was a cognitively demanding timed paper and pencil based test. Since the other measures were self-paced, and therefore participants would complete them at different times, it would not have been feasible to administer the timed test at different times per participant. Furthermore, if participants were told to wait for all others to complete the self-paced measures before taking the WPT-R, then waiting time would be different for all participants, and thus a potential confound. The second measure was a composition of the polychronicity, work locus of control and stress tolerance measures. It was important that participants took the polychronicity measure before taking the multitasking measure, because it is possible that their responses would have been influenced by the multitasking assessment. The other two measures were included with the polychronicity scale to maximize the simplicity of the battery. Participants were already asked to access two different online sites. Requesting that they access a third or fourth site could have added unnecessary complications to the battery. The multitasking assessment was the next measure in the battery. It was chosen to precede the PCI because it was a cognitively demanding test that could be more susceptible to fatigue effects than the Big-5 personality measure. Despite the intentions to strike a balance between fatigue and complexity, it is possible that certain measures may influence the results of subsequent measures. For example, it is possible that the items on the polychronicity scale cued participants to approach the multitasking assessment in a certain way. Or, it is possible that the practice gained by the WPT-R improved participants’ performance on the multitasking assessment. In the end, it was concluded that the potential confounds addressed
by administering the order of the test battery as it was outweighed those that could be attributed to order effects.

**FUTURE DIRECTIONS**

Based on the limitations described above, a number of recommendations for future research can be made. First and foremost, a similar study with a larger sample size would be advised. If there are statistically significant relationships between the constructs in this study, it will require a large sample size to detect them. Another recommendation would be to conduct a similar study outside of the academic setting. Since it is possible that the results from this study’s lab sample of undergraduate psychology students might not generalize to the greater population of people in the workplace, collecting data from a sample more diverse in age and race is recommended. A third recommendation would be to measure the stress induced by the multitasking assessment itself. Since it appears that performance on the assessment was not affected by one’s level of stress tolerance, it is possible that participants’ levels of anxiety were not raised by the test. If it can be determined that the assessment itself does not create an anxiety provoking situation, then perhaps a stress inducer (or at least the threat of one) could be added to the study. If participants know that their performance will determine whether or not a negative consequence will ensue, then perhaps they will feel more anxious in the situation, which may then tap personality traits that can mitigate the stress. Furthermore, the possible benefits of personality traits may only manifest themselves at a more macro level. It is possible that the single situation participants engaged in was not equivalent to the type of environment discussed by Kaufman et al. (1991), who proposed that congruence between an individual’s level of polychronicity and environment would result in
greater performance. As ambitious as it may be, a longitudinal field study would be recommended to study such effects.

**IMPLICATIONS**

The significant effect of age on multitasking performance has strong implications for organizations. Since there are legal issues with hiring based on age, it would not be advisable to generalize the findings in this study to make selection decisions. However, managers may be able to use this finding to their advantage. Managers may be advised to delegate work that requires multitasking, or work that may be more prone to interruption, to younger employees. However, managers should be cautious not to allow this behavior to impact matters related to performance, bonuses, or promotion.

Another noteworthy implication of this study is the differences in scores among races on the multitasking ability assessment. Similar to most cognitive ability tests, African-Americans and Hispanics scored significantly lower on the multitasking assessment than Caucasians. Although the criterion-related validity (on job performance) of the proprietary multitasking measure is unknown, if an organization were to use the assessment to make hiring decisions, it should be aware of these racial differences in performance on the test. Such differences may result in adverse impact against certain minority groups.

The significant (negative) effect of openness to experience on the multitasking assessment may have potential implications on selection and how to managers can delegate responsibilities to their direct reports. Given that a particular position requires a considerable amount of multitasking, it may be recommended to measure candidates levels’ of openness to assist in making a hiring decision. With regard to work delegation, managers that have a variety of projects that need to be completed can use their knowledge of their direct reports’
level of openness to distribute the projects accordingly. Based on the findings in this study, a
manager would be advised to give individual tasks to employees that are open to new
experiences. Based on the results of the present study, it seems that those who have curious
and imaginative tendencies are not particularly good multitaskers. Giving these individuals
multiple tasks may function to impair their ability to think creatively and approach tasks in
novel ways. If many tasks need to be completed, it may be advisable to assign several of
them to individuals that prefer routines and structure. These types of individuals may be
more likely to utilize a more structured approach that may be more effective in working on
multiple tasks.

** Conclusion **

The purpose of this study was twofold. The first purpose was to expand the
knowledge base on what individual difference variables predict multitasking ability. The
second was to further understand the nomological network of polychronicity. Despite many
non significant results, these purposes were both met. In fact, it can be argued that it was
through these null effects that these purposes were further achieved. It appears quite clear
now that polychronicity is not a practically significant predictor of multitasking ability.
Besides openness to experience, which negatively predicts multitasking ability, it appears
that most personality variables do not practically predict multitasking ability. Age and race
both had significant effects on multitasking ability, which can have important implications on
selection and managerial decision making. With regard to the second purpose of this study, it
appears that among the constructs analyzed, extraversion is the only variable that relates to
polychronicity. To conclude, this study helped close the book on a common misconception,
broadened our understanding of an important ability in today’s working world, and expanded the knowledge of a relatively understudied construct.
REFERENCES


APPENDIX A

INVENTORY OF POLYCHRONIC VALUES

(BLUEDORN, 1999)
1. I like to juggle several activities at the same time
2.* I would rather complete an entire project every day than complete parts of several projects
3. I believe people should try to do many things at once
4. *When I work by myself, I usually work on one project at a time
5. *I prefer to do one thing at a time
6. I believe people do their best work when they have many tasks to complete
7. *I believe it is best to complete one task before beginning another
8. I believe it is best for people to be given several tasks and assignments to perform
9. *I seldom like to work on more than a single task or assignment at the same time
10. I would rather complete parts of several projects every day than complete an entire project

*These items should be reverse scored.

Note. Response choices are; 1=disagree very much, 2 = disagree moderately, 3 = disagree slightly, 4 = neither disagree nor agree, 5 = agree slightly, 6 = agree moderately, 7 = agree very much
APPENDIX B

WORK LOCUS OF CONTROL SCALE

(SPECTOR, 1988)
1.*A job is what you make of it.
2.*On most jobs, people can pretty much accomplish whatever they set out to accomplish.
3. *If you know what you want out of a job, you can find a job that gives it to you.
4. *If employees are unhappy with a decision made by their boss, they should do something about it.
5. Getting the job you want is mostly a matter of luck.
6. Making money is primarily a matter of good fortune.
7.*Most people are capable of doing their jobs well if they make the effort.
8. In order to get a really good job you need to have family members or friends in high places.
9. Promotions are usually a matter of good fortune.
10. When it comes to landing a really good job, who you know is more important than what you know.
11. *Promotions are given to employees who perform well on the job.
12. To make a lot of money you have to know the right people.
13. It takes a lot of luck to be an outstanding employee on most jobs.
14. *People who perform their jobs well generally get rewarded for it.
15. *Most employees have more influence on their supervisors than they think they do.
16. The main difference between people who make a lot of money and people who make a little money is luck.

*These items should be reverse scored.

Note. Response choices are; 1=disagree very much, 2 = disagree moderately, 3 = disagree slightly, 4 = neither disagree nor agree, 5 = agree slightly, 6 = agree moderately, 7 = agree very much
APPENDIX C

PARTICIPANT ASSESSMENT PROTOCOL
The following is a step-by-step protocol for accessing each of the 5 assessments you will be taking. Please adhere to each of the steps and in the order in which they are presented. No questions can be answered by the researcher while taking the tests. Calculators are not allowed to be used during any of the assessments. You may use scratch paper, but please do not write on this sheet.

To make it easier to access the websites listed below, an electronic version of this document can be found in the student network folder. To access this document, first log in to the computer by clicking ‘student’ and entering ‘student’ (no quotes) as the password. Next, click the question mark (or the blue folder if there is no question mark) right above the trash can in the right hand icon panel. Open the public folder, then open the folder called TDC. The filename is “SurveyProtocol.doc.” You can copy and paste the links into a Mozilla Firefox browser (Safari is incompatible with the electronic assessments) that way you do not need to enter each URL manually.

**Assessment 1: Paper and Pencil**

1. You will be handed a booklet called “WPT: Wonderlic Personnel Test.” PLEASE DO NOT OPEN BOOKLET UNTIL INSTRUCTED
2. Take a few minutes to read and fill out the cover page. Please do not write your actual name on the test.
   a. For “Your Name,” and for “Social Security Number” please write the identification number given to you when you entered the room.
   b. Please also write today’s date.
   c. Disregard “Position Held/Applying For”
3. When instructed, please open the booklet and begin the test.
4. You will have 12 minutes to complete as many questions as you can. Please answer questions in order. If you do not know an answer to a question you may skip it and proceed to the next question. Please put your pencil down and close the booklet when instructed and the researcher will come around and collect them both.

**Assessment 2: Computer Based**

1. Open Mozilla Firefox (Safari is not compatible with this phase of the study) then copy and paste the following link in the browser:
2. (LINK TO ASSESSMENT INSERTED HERE)
3. Answer each question. You must answer each question to proceed to the next page of the assessment.
4. On the last page, please provide us with the demographic information requested (Note: You are not required to answer these questions if you are uncomfortable in doing so).
5. For the “User ID” and password fields, please enter the user id given to you when you entered the room.
6. When you are finished, click “Done”.

Continue on to next page
Assessment 3 and 4: Computer Based

1. In Mozilla Firefox (Safari is not compatible with this phase of the study) then copy and paste click the following link in the browser. This will take you to a site where you will complete two assessments:

(LINK TO ASSESSMENT INSERTED HERE)

2. Please click the “Register Now” button in the “New Users” box.
3. Fill out the following fields accordingly:
   a. For “User Name,” enter the user id given to you when you entered the room.
   b. For “Password,” enter ‘XXXX’ (no quotes).
   c. For “Password Hint” enter ‘XXXX’ (no quotes).
4. Privacy information will be presented to you. If you agree to these terms please click the checkbox “I have read and agreed to the privacy statement” and click “continue”.
5. Your first and last name will appear again, please click “Next.”
6. OPTIONAL- If you would like, provide the additional information requested and click “Continue,” or if you would not like to, simply click “Continue.”
7. Click the “Click here to start your assessment” button and follow the instructions that appear on the screen. This will begin the first test, a second test will follow immediately after completion of the first. Please follow the instructions and complete the second test as well. NOTE: Even though the instructions say you can use a calculator, please do not use one, however you may use scratch paper.
8. After completing both tests, please quietly raise your hand to begin the final assessment.

Assessment 5: Paper and Pencil

1. The researcher will hand you a test booklet and an answer booklet.
2. Please fill in the following fields accordingly
   a. First Name: Student
   b. Last Name: XXXX
   c. Purpose: XXXX
   d. Usercode: XXXX
   e. Job Code: XXXX
   f. Social Security Number: Your user ID given to you when you entered the room.
3. Open the test booklet, review the directions, and begin the assessment. You will have as much time as you need to complete the assessment.
4. Once finished, raise your hand and the researcher will collect the test booklet and answer booklet then will excuse
5. In the upcoming weeks you will receive an email with a debriefing statement for this study.

Thank you for participating!
APPENDIX D

DEBRIEFING STATEMENT
Hello,

First and foremost, thank you very much for participating in my study (Study 416 on SONA). The purpose of my research is twofold. The first purpose is to develop a stronger understanding of a personality trait called polychronicity, which is one’s preference to multitask as well as one’s belief that multitasking is the best way to complete tasks (Bluedorn & Denhardt, 1988). To add to previous research on polychronicity, several personality traits (extraversion, conscientiousness, intellectance, work specific locus of control, stress tolerance) and abilities (cognitive and multitasking) were measured to see if they predict one’s polychronic preference. The second purpose of this research is to see if the same variables mentioned above also predict one’s ability to multitask. As a participant of this study, you took a multitasking ability assessment, two cognitive ability tests, and several personality trait inventories. The data extrapolated from all who participated will be used to analyze the aforementioned relationships.

 Practically speaking, this line of research can have some noteworthy implications on organizations’ hiring practices. Multitasking has become such an integral aspect of almost every job today that many employers have actively begun to seek out and hire employees based on their ability to multitask (Bühner, König, Pick, & Krumm, 2006). Unfortunately, there are few employee selection tools that have been shown to predict multitasking ability and this is largely due to the dearth of knowledge on it. This study will add to the literature on multitasking ability and provide researchers with a better understanding of the construct and how organizations can capitalize on its potential worth.

If you have any questions, concerns or other inquiries about the study or your participation in it, please contact one of the resources listed below:

(CONTACT INFORMATION FOR STUDENT RESEARCHER, FACULTY ADVISOR, AND UNIVERSITY IRB DEPARTMENT LISTED HERE)

References
