ABSTRACT

TRAVININ, GARY IGOR. A Study of Polychronicity and its Relationship to Personality and Job Performance: Does Person-Job Fit on Polychronicity Predict Multiple Indicators of Job Performance? (Under the direction of Dr. Mark A. Wilson).

Polychronicity is the attitudinal element of one’s preferences for doing several things at once while at work. Research involving polychronicity and performance outcomes has shown that polychronicity matters but empirical findings have generally been mixed. This study examined person-job fit on polychronicity and its relationship to multiple indicators of job performance, as well as relationships between polychronicity and the personality. Data from 317 employees and immediate supervisors in a law enforcement sample were used from an archival source. Contrary to expectations, polynomial regression revealed that there was no relationship between person-job fit on polychronicity and indicators of job performance. Regression analysis did reveal that higher levels of the conscientiousness, extraversion, and openness to experience were related to greater levels of polychronicity and that being relationship oriented did not mediate the effect between extraversion and polychronicity. Lower levels of neuroticism were related to higher levels of polychronicity. Multiple regression analysis revealed that when entered together, openness was the only significant predictor of polychronicity. Taken together these findings suggest that personality is predictive of polychronicity and that person-job fit on the dimension may not be related to job performance. Directions for future research and implications for practitioners are discussed.
A Study of Polychronicity and its Relationship to Personality and Job Performance: Does Person-Job Fit on Polychronicity Predict Multiple Indicators of Job Performance?

by
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DEDICATION

This is dedicated to my mother, Natalie Goldin. Your strength, reassurance, and love have been an unwavering inspiration.
BIOGRAPHY

Gary Travinin was born in 1989 in Saint Petersburg, Russia eventually moving to Cleveland, OH in his youth. After graduating from Solon High School he received his Bachelor of Arts degree from The Ohio State University in 2010. He then began his graduate education in the Industrial/Organizational Psychology Doctoral Program at North Carolina State University under the direction of Dr. Mark A. Wilson. Gary has been employed as a graduate teaching assistant in the psychology department and as a program coordinator for the Institute for Nonprofits at North Carolina State University. Gary has also worked as an intern for Aon Hewitt’s Selection and Assessment service line.
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# TABLE OF CONTENTS

**LIST OF TABLES** ........................................................................................................ vi
**LIST OF FIGURES** ..................................................................................................... vii

**Polychronicity** ........................................................................................................... 3

**Needs-Supplies Person-Job Fit** .................................................................................. 4

**Fit on Polychronicity and Performance** ...................................................................... 5

**Personality Variables as Predictors of Polychronicity** ................................................ 6

**Method** ....................................................................................................................... 9

- **Participants** ........................................................................................................... 9
- **Procedure** ............................................................................................................. 9
- **Measures** .............................................................................................................. 10

**Analysis and Results** ............................................................................................... 15

**Discussion** ................................................................................................................. 19

- **Practical Implications** .......................................................................................... 22
- **Limitations and Future Directions** .......................................................................... 22

**REFERENCES** ........................................................................................................... 24

**APPENDICES** ............................................................................................................ 38

- **Appendix A. Inventory of Polychronic Values (IPV)** .............................................. 39
- **Appendix B. Modified Inventory of Polychronic Values** ......................................... 40
- **Appendix C. International Personality Item Pool (IPIP)- Conscientiousness** ........... 41
- **Appendix D. International Personality Item Pool (IPIP)- Extraversion** ...................... 42
- **Appendix E. International Personality Item Pool (IPIP)- Openness to Experience** ...... 43
- **Appendix F. International Personality Item Pool (IPIP)- Agreeableness** .................... 44
- **Appendix G. International Personality Item Pool (IPIP)- Neuroticism** ....................... 45
- **Appendix H. Least Preferred Coworker Scale** ......................................................... 46
- **Appendix I. Overall Performance Measure** ............................................................ 47
- **Appendix J. Current Performance Measure** ............................................................. 48
- **Appendix K. Promotion Potential Measure** ............................................................... 52
- **Appendix L. Civic Virtue, Altruism, & Courtesy** ..................................................... 53
- **Appendix M. Thesis Proposal** ................................................................................. 54
LIST OF TABLES

Table 1. Factor Analysis of Task Performance .............................................................. 30
Table 2. Summary of Intercorrelations, Means, and Standard Deviations .............. 31
Table 3. Results of Polynomial Regressions of Performance Indicators and NS Fit for the Construct of Polychronicity ............................................................................ 32
Table 4. The Big Five as Predictors of Preferred Polychronicity, Regressed Separately ........................................................................................................................................ 33
Table 5. The Big Five as Predictors of Preferred Polychronicity, Multiple Regression ........................................................................................................................................ 33
LIST OF FIGURES

Figure 1. Response surface plot between person-job fit on polychronicity and overall performance .................................................................34

Figure 2. Response surface plot between person-job fit on polychronicity and promotion potential ..................................................................................35

Figure 3. Response surface plot between person-job fit on polychronicity and organizational citizenship behavior .............................................36

Figure 4. Response surface plot between person-job fit on polychronicity and current performance ........................................................................37
A Study of Polychronicity and its Relationship to Personality and Job Performance: Does Person-Job Fit on Polychronicity Predict Multiple Indicators of Job Performance?

We each have unique preferences for how we like to complete work tasks, assignments, and duties but despite our preferences our environment may not always be conducive to our style of work. Hecht and Allen (2005) questioned their readers on how they would approach reading their paper. Would they switch between reading it and performing different tasks or would they finish it in one sitting before moving onto something new? Regardless of your own approach, your work environment or job characteristics may dictate how you end up actually reading the paper through the presence of distractions and other priority demands. If people’s attitudes on how they prefer to do work differ from how their environment allows them to do it, they will experience a sense of incongruity. This incongruity could negatively impact job-relevant outcomes (Edwards, 1996; Kristof, 1996; Kristof-Brown, Zimmerman & Johnson, 2005; Arthur, Bell, Villado & Doverspike, 2006).

The purpose of this study was to test whether congruence or fit on polychronicity, an attitudinal variable regarding one’s preference for performing work, predicted multiple indicators of job performance.

The focus of the current study relates to the fit between individual preferences for work and the perceived job characteristics present to fulfill them, often referred to as need-supplies fit (Edwards, 1991). More specifically I examined whether fit on measures of preferred polychronicity and job supplies for polychronic behavior were related to higher levels of job performance. This research not only attempted to establish a clearer understanding of polychronicity and its relationship to performance but also addressed the lack of interactionist research on this focal construct by testing the effects of person-job fit
(Hecht & Allen, 2005; König and Waller, 2010). Literature on person-job fit has shown that fit between job qualities or demands and relevant dimensions of abilities, knowledge, skills, needs, preferences and values relate to outcomes such as organizational commitment, job satisfaction, intent to quit, and job performance (Edwards, 1996; Kristof, 1996; Kristof-Brown et al., 2005). I also explored a more complete operationalization of job performance in relation to polychronicity. Past research on the relationship between polychronicity and performance has primarily used one measure of job performance (Massey, 2002; Hecht, 2003; Arndt, Arnold, & Landry, 2006; Nonis, Teng & Ford, 2005; Bluedorn, 2007; König and Waller, 2010; Woods, 2014). Taking advantage of a simultaneous promotion management project conducted by North Carolina State University with a state law enforcement agency I was able to assess multiple indicators of job performance including organizational citizenship behaviors and promotion potential. This study was the first to examine person-job fit on polychronicity using supervisory ratings, response surface methodology, and multiple indicators of job performance.

This study also examined the nomological network of polychronicity by exploring the predictive ability of the big five personality variables and the potential mediating effect of being task or relationship oriented. More specifically I examined if the big five are statistically significant predictors of polychronicity and whether the proposed relationship between extraversion and polychronicity is explained through participants scores on the least preferred coworker scale, an indicator of if one has a relationship or task oriented style. Past research examining the big five and polychronicity is limited with results being mixed (König & Waller, 2010; Sanderson, 2013). No study to date has tested the proposed
mediating effect of being task or relationship oriented on the relationship between extraversion and polychronicity.

In order to better understand the examinations within the study I first present an overview of the focal construct of polychronicity as well as its relationship with performance. Secondly I provide a brief review of person-job fit, more specifically the needs-supplies component, and its relationship to performance. I then talk about the relationship between person-job fit on polychronicity and how it may impact job performance. Next, I discuss personality variables as a predictor of polychronicity as well as the possible mediating effect of being relationship oriented. I conclude with a detailed discussion of the sample, methodology, analysis, results, and implications drawn from this research.

**Polychronicity**

Hall (1959) is credited with first introducing the concept of polychronicity while studying various cultures’ use of time (Slocombe & Bluedorn, 1999; Hecht & Allen, 2005). There is disagreement in the literature about the definition of polychronicity (Bluedorn, Kalliath, Strube, and Martin, 1999; Conte & Gintoft, 2005; Hecht & Allen, 2005, König & Waller, 2010); I chose to adopt the suggestion of König and Waller (2010), defining polychronicity as the preference or value for doing several things at the same time. This definition “avoids any assumption about the judgments of others by high-polychronicity individuals” and draws an important differentiation between the preference or value for doing several things (polychronicity) and the observable behavior of doing several things (multitasking) (König & Waller, 2010, p. 175). Unfortunately research examining polychronicity and performance has produced mixed findings, with studies having found positive relationships (Arndt et al., 2006; Conte & Gintoft, 2005), negative relationships
(Conte & Jacobs, 2003; Harris & Wiggins, 2008), and no relationship (Payne & Philo, 2002; Turner, Grube, Tinsley, Lee, & O’Pell, 2006), using various measures of performance (e.g., self-rated, supervisor ratings, grade point average, simulation tasks). König and Waller (2010) suggested that this disparity in findings may be due to the various interpretations of the construct or that polychronicity may impact performance but only if there is a “fit” between person and job polychronicity levels. The latter explanation drives the research in the current study; this person-job fit research design for examining polychronicity and performance is considered the next frontier for the construct (König & Waller, 2010).

**Needs-Supplies Person-Job Fit**

Edwards (1991) defined needs-supplies person-job fit (NS fit) as the congruence between the desires of a person and the attributes of a job, referring to whether or not the job has the opportunities to satisfy the needs, values, or preferences of the person (Hecht & Allen, 2005). “Needs” refer to the desires, preferences, motives, and goals of the individual while “supplies” refer to the perceived qualities of the job that may fulfill these needs (Edwards, 1996). Research on NS fit has generally shown that when supplies or opportunities provided by the job to fulfill needs, values or preferences are lacking one can expect poor job outcomes (Kristof, 1996; Edwards, 1996; French, Caplan & Harrison, 1982; Hecht & Allen, 2005). NS fit is typically studied in relation to attitudinal elements such as job satisfaction, organizational commitment, and psychological strain. Studies have also found that it can have an impact on several other job outcomes as well such as job performance, intent to quit, and absenteeism (Kristof et al., 2005; Shaw, Duffy & Stark, 2000). Cable and DeRue (2002) identified in their review that the existing literature had not properly explored the explanatory power of NS fit versus other fit perceptions.
**Fit on Polychronicity and Performance**

This study theorized that person-job fit on the needs-supplies component, specifically the opportunities for polychronicity on the job (supplies) and the individual’s preference for polychronic behavior (needs) will lead to higher levels of job outcomes (Kristof, 1996; Kristof et al., 2005; Edwards, 1996; Slocombe & Bluedorn, 1999; Hecht & Allen, 2005). This fit can occur along a continuum at any point in-between two extremes, polychronic and monochronic fit. Polychronic fit occurs when the person values or prefers to do many things at once and has the opportunities to do so through the job while monochronic fit occurs when the person prefers not to do many things at once and his or her job does not provide opportunities to do so (Hecht & Allen, 2005). Misfit occurs when one’s preference for multitasking behavior is different from the opportunities provided by the job (Hecht & Allen, 2005). This misfit may occur in either direction with either too few opportunities (insufficient supplies) or too many opportunities (excess supplies). Consistent with previous research I can hypothesize that excess supplies of polychronicity opportunities will not lead to higher levels of the outcome variables (Slocombe & Bluedorn, 1999; Hecht & Allen, 2005).

The current study added a unique contribution to the literature by examining needs-supplies fit on the dimension of polychronicity using supervisory ratings of performance, polynomial regression with response surface methodology, and multiple indicators of job performance (task performance, organizational citizenship behavior, and promotion potential). Few studies have examined fit on polychronicity and its relationship to job performance, with existing work utilizing self-rated measures of performance with response surface methodology (Hecht, 2003; Woods, 2014) or supervisory ratings with difference scores (Massey, 2002). To date there are no studies examining multiple indicators of job
performance in relation to fit on polychronicity. Overall results of these three studies are inconclusive with more research needed using response surface methodology, supervisory ratings of performance, industry samples, and more diverse measures of job performance criterion.

**Hypothesis 1.** Greater needs-supplies person-job fit (congruence) between preferred polychronicity and polychronicity supplies will be related to higher levels of task performance (H1a), promotion potential (H1b), and citizenship behaviors (H1c) than will misfit or incongruence.

**Personality Variables as Predictors of Polychronicity**

The secondary aim of this study was to replicate past research in examining the big five as predictors of polychronicity with an industry sample (law enforcement). The literature examining the big five as predictors of polychronicity is small with results largely being inconclusive (König & Waller, 2010; Sanderson, 2013). In her 2013 dissertation, Sanderson conducted a meta-analysis on the small number of studies available examining at least one aspect of the big five and polychronicity and was able to identify statistically significant relationships with extraversion and openness to experience. The current study will explore each variable of the big five and its relationship to polychronicity. I also offer a unique contribution by examining a potential mediator between extraversion and polychronicity.

Conscientiousness reflects dependability, being careful, thorough, responsible, organized while also including volitional elements such as hardworking, achievement-oriented, and persevering (Barrick & Mount, 1991). Conscientiousness was hypothesized as being negatively related to polychronicity by Hall (1983), who identified polychronic individuals as less-schedule, less-appointment, and less-deadline oriented. While this
negative relationship has been found by some the research so far is inconclusive or statistically negligible (König & Waller, 2010; Conte & Gintoft, 2005; Conte & Jacobs, 2003; Kantrowitz, Grelle, Beaty, & Wolf, 2012; Sanderson, 2013).

**Hypothesis 2a.** Conscientiousness will be negatively related to polychronicity (H2a).

Openness to experience reflects traits such as being imaginative, cultured, curious, and broad minded (Barrick & Mount, 1991). Generally research examining the big five and polychronicity hasn’t found any statistically significant relationships with openness to experience (König & Waller, 2010; Conte & Gintoft, 2005; Conte & Jacobs, 2003). Two recent studies did however find evidence for a positive relationship between openness to experience and polychronicity (Kantrowitz et al., 2012; Sanderson, 2013).

**Hypothesis 2b.** Openness to experience will be positively related to polychronicity (H2b).

Personality traits associated with being courteous, flexible, trusting, forgiving, or tolerant are interpreted as agreeableness (Barrick & Mount, 1991). Haase, Lee, and Banks (1979) noted that polychronicity was related to tolerance for ambiguity as well as an unstructured work environment (Sanderson, 2013). While some research has failed to find any statistically significant relationships between agreeableness and polychronicity (König & Waller, 2010; Conte & Gintoft, 2005; Conte & Jacobs, 2003), others have found partial support for a positive relationship (Kantrowitz et al., 2012; Sanderson, 2013). It is reasonable to assume that polychronic individuals may exhibit higher levels of agreeableness.

**Hypothesis 2c.** Agreeableness will be positively related to polychronicity (H2c).

Low emotional stability or neuroticism is associated with feelings of anger, depression, embarrassment, worry, and insecurity (Barrick & Mount, 1991). Previous
research suggests that individuals who are anxious will likely not perform well in multitasking environments (Oswald, Hambrick, and Jones, 2007, Sanderson, 2013). Despite research failing to establish a statistical link between neuroticism and polychronicity, it seems reasonable to assume those who exhibit high levels of neuroticism will not have polychronic work habits (König & Waller, 2010; Conte & Gintoft, 2005; Conte & Jacobs, 2003, Sanderson, 2013).

**Hypothesis 2d.** Neuroticism will be negatively related to polychronicity (H2d).

Extraversion is often associated with being assertive, talkative, and active (Barrick & Mount, 1991). A degree of being sociable and expressive is also generally considered indicative of this dimension of the big five (Hogan, 1986). Polychronic individuals are thought to be more relationship oriented rather than task focused (Hall, 1983). Existing research has found support for a positive relationship between extraversion and polychronicity (König & Waller, 2010; Kantrowitz et al., 2012; Conte & Gintoft, 2005; Conte & Jacobs, 2003).

**Hypothesis 2e.** Extraversion will be positively related to polychronicity (H2e).

Interestingly, Hall’s (1983) suggestion that polychronic individuals are more relationship-oriented has never been empirically tested (König & Waller, 2010). Sanderson (2013) also called for future research to begin examining moderating and mediating effects between personality variables and polychronicity. The current study explores one style toward being relationship-oriented as a potential mediator of the relationship between extraversion and polychronicity.

**Hypothesis 3a.** Being relationship oriented will mediate the relationship between extraversion and polychronicity (H3a).
Method

Participants

The data used for this study was part of an existing promotion management system. Study participants included 330 employees from a regional law enforcement agency. Respondents were primarily male (N= 324) and had been with the organization for an average of 14.09 years (SD= 4.66). Only complete cases of responses and supervisory ratings were included for analysis resulting in a final sample size of 317 with 10 cases being removed based on individual polychronicity, 2 on job polychronicity, and 1 for relationship-orientation. A total of 141 immediate supervisors provided ratings for the 317 employees. Supervisors were primarily male (N= 135) with an average tenure of 17.42 years (SD= 3.92) and had reported having worked with the employee they were rating for an average of 5.60 years (SD= 4.49). Nearly all supervisors (92%) indicated that they had “quite a bit” of an opportunity to observe their subordinate’s performance, the highest rating available.

Procedure

Polychronicity, least preferred coworker (LPC), and citizenship measures used for this assessment were added to the existing promotion management tool for the purposes of this study only. These additional measures did not contribute to participant’s final overall promotion score. Employees were invited to a testing site to electronically complete the promotion assessment. Participants were allowed a maximum of 3 hours to complete the assessment with testing being conducted 3 times a day at 9 different locations for different groups within the law enforcement agency. While they were informed that certain items were experimental, they were encouraged not to guess which they were and answer each question.
All testing was completed in one business day. Immediate supervisors provided performance ratings electronically after being prompted via email.

**Measures**

**Preferred polychronicity and job polychronicity supplies.** The standard questionnaire for measuring preferred polychronicity is the inventory of polychromic values (IPV) developed and validated by Bluedorn and colleagues (1999). The IPV was added into the promotion management assessment and completed by subordinates. This measure is typically 10 items and uses a 7-point Likert scale that ranges from 1 (*strongly disagree*) to 7 (*strongly agree*). In order to maintain consistency with the definition of polychronicity, I adopted the suggestions of König and Waller (2010) and removed items related to self-reported multitasking and beliefs that others should work in a multitasking style resulting in a 5-item measure. Cronbach’s alpha for this scale was .83. See Appendix A for the full measure.

To measure job polychronicity supplies I used a modified version of the IPV from Hecht and Allen (2005), who altered each item to reflect opportunities for polychronic work. Since this scale measures the perceived characteristics of the job and is not intended to measure personal beliefs about how others should complete work, all 10 items were included. This inclusion is supported by similarly designed past research (Slocombe & Bluedorn, 1999). This measure uses a 7-point Likert Scale and response options range from 1 (*strongly disagree*) to 7 (*strongly agree*), with higher scores indicating greater job polychronicity supplies. Cronbach’s alpha for this scale was .85. See Appendix B for the full measure.

**Conscientiousness.** Items for this personality dimension were drawn from the International Personality Item Pool and were a part of the original management promotion
assessment completed by subordinates (IPIP; Goldberg, 1999). This measure has 20 items and uses a 7-point Likert Scale. Response options range from 1 (strongly disagree) to 7 (strongly agree) with higher scores indicating greater conscientiousness. Cronbach’s alpha for this scale was .87. See Appendix C for the full measure.

**Extraversion.** Items for this personality dimension were drawn from the IPIP and were a part of the original management promotion assessment completed by subordinates (IPIP; Goldberg, 1999). This measure has 20 items and uses a 7-point Likert scale. Response options range from 1 (strongly disagree) to 7 (strongly agree) with higher scores indicating greater extraversion. Cronbach’s alpha for this scale was .84. See Appendix D for the full measure.

**Openness to experience.** Items for this personality dimension were drawn from the IPIP and were a part of the original management promotion assessment completed by subordinates (IPIP; Goldberg, 1999). This measure has 20 items and uses a 7-point Likert scale. Response options range from 1 (strongly disagree) to 7 (strongly agree) with higher scores indicating greater openness to experience. Cronbach’s alpha for this scale was .82. See Appendix E for the full measure.

**Agreeableness.** Items for this personality dimension were drawn from the IPIP and were a part of the original management promotion assessment completed by subordinates (IPIP; Goldberg, 1999). This measure has 20 items and uses a 7-point Likert scale. Response options range from 1 (strongly disagree) to 7 (strongly agree) with higher scores indicating greater agreeableness. Cronbach’s alpha for this scale was .80. See Appendix F for the full measure.
**Neuroticism.** Items for this personality dimension were drawn from the IPIP and were a part of the original management promotion assessment completed by subordinates (IPIP; Goldberg, 1999). This measure has 20 items and uses a 7-point Likert scale. Response options range from 1 (*strongly disagree*) to 7 (*strongly agree*) with higher scores indicating greater neuroticism. Cronbach’s alpha for this scale was .88. See Appendix G for the full measure.

**Least preferred coworker.** In order to identify if respondents were relationship or task oriented I used the LPC scale developed by Fiedler, Chemers & Mahar (1984), which was added to the management promotion assessment and completed by subordinates. Normally used in leadership research, the LPC asks the respondent to think of a coworker they work least well with on getting a job done. This measure has demonstrated strong internal consistency and a single factor structure (Rice, 1978). They are then given 18 opposing items (e.g. *untrustworthy and trustworthy*) and asked to describe this person by assigning an appropriate number for each of the items (e.g. 1= *unkind* to 8= *kind*). Higher scores on the LPC suggest that the respondent is relationship-oriented while lower scores indicate the respondent is task motivated or exhibits lower levels of being relationship-oriented. Cronbach’s alpha for this scale was .96. See Appendix H for the full measure.

**Task performance.** In order to measure task performance two criterion variables completed by supervisors from the management promotion system were combined in order to create a 12-item measure. The North Carolina State University team conducting the development of the Management Promotion System adapted the measure for overall performance from the work of Chan and Schmitt (2002) and Podsakoff and Mackenzie (1994). The measure contains 4 items and uses a 7-point Likert Scale. Response options
range from 1 (*strongly disagree*) to 7 (*strongly agree*) with higher scores indicating greater performance. Cronbach’s alpha for this scale was .95. See Appendix I for the full measure.

Current performance was measured using 8 items reflecting dimensions identified during the work analysis phase of the Management Promotion System. Dimensions were identified using reviews of other police agencies, previous performance dimensions for the law enforcement organization, and results from the work analysis. Ratings were gathered using Overall Task Identified Dimensional Evaluation (TIDE). TIDE ratings are on a 6-point Likert scale from 1 (*a great deal*) to 6 (*absolutely no*) when rating how much improvement their promotion candidate needed on the dimension. Higher scores were indicative of high performing candidates. Cronbach’s alpha for this scale was .92. See Appendix J for sample items. A description of each performance dimension can be found below:

*Scheduling.* This performance dimension measures the ability to effectively assign personnel to tasks and appropriately.

*Problem solving.* These skills are reflective of identifying problems and their causes, evaluating courses of action, and making decisions.

*Coaching performance.* This performance dimension indicates the ability to establish procedures to monitor, review, evaluate actions of subordinates and develop subordinates professionally.

*Adaptability.* The individual’s ability to adjust to novel information and experiences in a changing environment is measured with this performance dimension.

*Oral communication.* This performance dimension measures the ability to relay information in individual and group settings effectively.
**Written communication.** Written communication is the ability to effectively convey expression in writing and relaying information in a concise manner.

**Cooperation.** This performance dimension reflects the individual’s ability to work well with others from both inside and outside of the organization.

**Integrity.** Integrity is the degree to which the individual applies the knowledge and values of the organization to all situations.

**Promotion potential.** A measure of promotion potential was used from the management promotion system, which was completed by supervisors. Current promotability measures of the law enforcement agency were deemed to be insufficient by the North Carolina State University team so new items were written using previous literature on promotion potential (de Pater, van Vianen, Bechtoldt, & Klehe, 2009; Harris, Kacmar, & Carlson, 2006; Jawahar & Ferris, 2011; Shaughnessy, Treadway, Breland, Williams, & Brouer, 2011). The measure contains 12 items and uses a Likert scale. Response options range from 1 (strongly disagree) to 7 (strongly agree) with higher scores indicating greater promotion potential. Cronbach’s alpha for this scale was .96. See Appendix K for the full measure.

**Organizational citizenship behaviors.** In order to measure organizational citizenship behavior I used a scale from Podsakoff, MacKenzie, Moorman, and Fetter (1990), which was added to the management promotion system and completed by supervisors. This scale was identified as “especially suitable for use in situations in which interpersonal relations, cooperation, and team work are critical issues” (Van Dyne, Graham & Dienesch, 1994, p. 795). Discussions with project leaders of the subordinates promotion initiative identified three relevant dimensions for inclusion: civic virtue (responsible for, is involved in,
or concerned about the organization), altruism (helping others with organizationally relevant tasks), and courtesy (behaviors that prevent work related problems). The measure contains 5 items each for courtesy and altruism and 4 items for civic virtue. The instrument uses a Likert scale where response options range from 1 (strongly disagree) to 7 (strongly agree) with higher scores indicating greater levels of citizenship behaviors. Cronbach’s alpha for this scale was .96. See Appendix L for the full measure.

**Analysis and Results**

Before computing descriptive statistics, an exploratory factor analysis was run to determine if overall and current performance could be aggregated to create an overall measure of task performance. Please see Table 1 for the full results of the factor analysis. 12 items related to task performance were factor analyzed using principal axis factoring with Promax (oblique) rotation. This rotation method was chosen as I anticipated factors involving performance would be correlated. The analysis yielded two factors that explained 68% of the total variance. Commonality analysis revealed that the proportion of each variables variance explained by the factors was .40 or greater. The first factor explained 56% of the variance and mapped onto the 8 item current performance measure. The second factor explained 12% of the variance and mapped onto the 4 item overall performance measure. Given these results, I conducted subsequent analysis without aggregating overall and current performance into one measure and instead treating them as separate outcome measures.

The means, standard deviations, intercorrelations, and reliabilities are presented in Table 2. The sample size was large enough to ensure the normality of error distribution in the outcome variables. For the purposes of linear regression, assumptions of linearity, homoscedasticity, and multicollinearity were tested and produced satisfactory results. As can
be seen in Table 2 each measure demonstrated a Cronbach’s alpha of at least .80, indicating strong internal consistency. Generally speaking the sample reported having high levels of polychronic job opportunities \((M = 5.22, SD = .77)\), conscientiousness \((M = 5.97, SD = .48)\), and agreeableness \((M = 5.59, SD = .50)\). Performance, as rated by supervisors, was generally toward the high end for overall performance \((M = 5.78, SD = .07)\), current performance \((M = 4.76, SD = .78)\), promotion potential \((M = 5.53, SD = .09)\), and organizational citizenship behaviors (OCBs) \((M = 5.81, SD = .91)\).

Hypothesis 1a-1c (with task performance being analyzed at the overall and current level) predicted that person-job fit on polychronicity would correspond to higher levels of job performance outcomes. To test this, four polynomial regressions were conducted with response surface methodology. This technique addresses many of the weaknesses of difference scores and allows the researcher to obtain a much more complete image of the underlying relationship (Edwards & Parry, 1993; Edwards, 2002; Kristof, 2005). As recommended by Shanock et al. (2010) the analysis began by examining the frequency of discrepancies in the sample. Discrepancy analysis determines the base rate of agreement and disagreement between the two predictor variables (preferred polychronicity and job polychronicity supplies). Both predictor variables were standardized and discrepancies were counted when the standardized score on one predictor variable was half a standard deviation above or below the other predictor (Fleenor, McCauley, & Brutus, 1996). If such discrepancies were few in number, there would be no practical value of using this sample to examine person-job fit. This analysis revealed that the data had a diverse distribution of discrepancies with 36% in agreement, 30% having higher levels of job polychronicity supplies, and 34% having higher levels of preferred polychronicity.
Using SPSS software, I conducted a polynomial regression to calculate the surface values. This was accomplished by regressing each performance outcome variable on five predictor variables: preferred polychronicity, polychronicity supplies, preferred polychronicity squared, the product of preferred polychronicity and polychronicity supplies and polychronicity supplies squared. For the purposes of the polynomial regression analysis only, I scale-centered the predictor variables (preferred polychronicity and polychronicity supplies) in order to reduce multicollinearity and aid with interpretation (Kristof & Stevens, 2001; Shanock, Baran, Gentry, Pattison & Heggestad, 2010). Table 3 contains the results of the four polynomial regression equations. In each case the squared difference (constrained) model was also tested in comparison, with results showing that polynomial regression explained more variance in the model, though not significantly. The $R^2$ for each outcome was not significant, which indicated that person-job fit was not related to job performance outcomes. Hypothesis 1 was not supported.

Edwards (2002) cautioned that response surfaces should only be interpreted if a significant $R^2$ is supported. In an effort to be thorough, each response surface was still plotted and slope and curvatures calculated. Response surface analysis indicated that for overall performance (Figure 1), promotion potential (Figure 2), and OCBs (Figure 3) fit corresponded to lower levels of the outcome variables. The slope and curvature of the line of perfect agreement were both not significant as expected, indicating equal levels of outcome variables along the continuum of polychronic to monochronic fit and a linear relationship. The slope and curvature along the line of misfit were also not significant, indicating no directional (one predictor impacting performance more than another) or curvature effects.
In the case of current performance (Figure 4) the relationship was essentially flat.

Hypothesis 2a through 2e predicted that the big five would be statistically significant predictors of preferred polychronicity. More specifically, that conscientiousness (2a) and neuroticism (2d) would be negatively related to polychronicity, while openness (2b), agreeableness (2c) and extraversion (2e) would be positively related. In order to test this, polychronicity was regressed against each big five predictor separately. Please see Table 4 for complete results. Conscientiousness was positively related to preferred polychronicity ($\beta = .12$, $t(315)= 2.23$, $p = .03$), such that higher levels of conscientiousness were associated with greater polychronicity. Hypothesis 2a was partially supported. Openness to experience was positively related to preferred polychronicity ($\beta = .25$, $t(315)= 4.58$, $p = .00$), such that higher levels of openness were associated with greater polychronicity. Hypothesis 2b was supported. Agreeableness was not significantly related to polychronicity, indicated no support for Hypothesis 2c. Neuroticism was negatively related to polychronicity ($\beta = -.13$, $t(315)= -2.28$, $p = .02$), such that lower levels of neuroticism were associated with greater polychronicity. Hypothesis 2d was supported. Extraversion was positively related to polychronicity ($\beta = .12$, $t(315)= 2.07$, $p = .04$), such that higher levels of extraversion were associated with greater polychronicity. Hypothesis 2e was supported. Using multiple regression, all of the big five were entered simultaneously to test for unique variance explained. Collinearity statistics indicated that the assumption of multicollinearity was not violated (Conscientiousness, $Tolerance = .60$, $VIF = 1.67$; Extraversion, $Tolerance = .64$, $VIF = 1.56$; Agreeableness, $Tolerance = .56$, $VIF = 1.78$; Openness, $Tolerance = .67$, $VIF = 1.49$; Neuroticism, $Tolerance = .42$, $VIF = 2.36$). Overall results indicated that when regressed
simultaneously only openness remained significant and positively related to polychronicity ($\beta = .25$, $t(311)= 3.70$, $p = .00$). Please see Table 5 for full results.

Hypothesis 3a predicted that being relationship oriented would mediate the relationship between extraversion and polychronicity. In order to test this, both the method proposed by Baron and Kenny (1986) and PROCESS software created by Hayes (2012) was used. Mediation analysis failed at steps 2, 3, and 4 for the Baron and Kenny approach and did not indicate significant indirect effects for the Hayes PROCESS. Both methods failed to show support for mediation, relationship orientation did not contribute to the indirect effect of extraversion on polychronicity. Hypothesis 3a was not supported.

**Discussion**

The goal of this study was to test the theory of person-job fit on polychronicity and its relationship to multiple indicators of job performance. The relationship between polychronicity and job performance is not well understood with future research calling for examinations of fit (König & Waller, 2010). Existing research in this area has utilized self-report measures, supervisory ratings with difference score analysis, and single indicators of job performance (Massey, 2002; Hecht, 2003; Woods, 2014). Results from these previous investigations have been largely inconclusive. The current study hoped to contribute to this literature by utilizing supervisory ratings of performance, polynomial regression with response surface methodology, and multiple indicators of performance.

Results did not show support for hypothesis 1; person-job fit on polychronicity was not predictive of four indicators of job performance. Although research has found that fit on polychronicity can lead to increased satisfaction and organizational commitment, it has so far failed to demonstrate this relationship with performance (Slocombe & Bluedorn, 1999; Hecht
& Allen, 2005). One possible explanation for the lack of findings thus far is that fit on polychronicity may largely be related to attitudinal outcomes (e.g. satisfaction, strain) while fit between multitasking ability and demands may be related to outcomes such as job performance (Kristof-Brown et al., 2005). Polychronicity is the attitudinal element of multitasking or in the other words the preference or value for doing so. The examination of fit on polychronicity should be conceptualized as needs-supplies rather than demands-abilities fit. The former is a more objective concept of fit, specifically between the tasks required by the job and the knowledge, skills, and abilities of the individual (Edwards, 1991). Although König and Waller (2010) warn that researchers must not use the concept of fit “as a panacea for explaining contradictory results”, it is possible an examination of person-job fit on multitasking ability and demands, rather than polychronicity, could provide stronger models for predicting performance (p. 185).

A second goal of this study was to replicate previous research on the big five personality variables as predictors of polychronicity as well as a unique contribution in whether relationship orientation mediated the effect of extraversion on polychronicity. The study found that four of the big five were significant predictors of polychronicity.

Higher levels of conscientiousness were found to correspond to greater individual polychronicity. This result was somewhat inconsistent with previous findings as this relationship is generally thought to be negative, although overall findings are mixed (Conte & Jacobs, 2003; König & Waller, 2010; Sanderson, 2012). The conceptualization of conscientiousness being negatively related to polychronicity is founded on Hall’s (1983) observations of polychronic versus monochronic cultures. The overall diversity of findings, taken with the findings of this study suggests that conscientiousness may in fact have a more
favorable relationship with polychronicity in the workplace. Perhaps those that are more conscientiousness prefer to multitask in an effort to work purposefully or meet deadlines.

Hypotheses pertaining to extraversion and neuroticism were confirmed in the current study. Greater levels of extraversion were related to greater individual polychronicity while neuroticism corresponded to lower levels. The findings on extraversion conform to findings in the research (Conte & Jacobs, 2003; Conte & Gintoft, 2005; Kantrowitz et al., 2012). The current study also contributes to the literature by finding a statistically significant relationship between neuroticism and polychronicity. While the directionality of this relationship has generally been supported, most studies report weak relationships (Sanderson, 2012; Conte & Gintoft, 2005; Conte & Jacobs, 2003).

In their review of the literature König and Waller (2010) consistently found that agreeableness and openness to experience had no relationship with polychronicity. Interestingly two recent studies did find partial support for a positive relationship with polychronicity (Kantrowitz et al., 2012; Sanderson, 2013). The current study was unable to replicate these results for agreeableness but did find a positive relationship with openness. Perhaps more surprisingly, when all five personality variables were entered simultaneously into a multiple regression, openness was the only predictor that remained significant. It is important not to over-interpret this finding, but the current study does suggest that openness could be an overlooked correlate with polychronicity.

Finally, the level of one’s relationship orientation did not mediate the relationship between extraversion and polychronicity. Similar to conscientiousness, this suggested relationship is based on the cultural observations of Hall (1983) and had never been directly tested. Although the findings do not disprove Hall’s observations, they do suggest that when
examining the workplace, the underlying mechanism explaining extraversion’s relationship with polychronicity may be something different such as one’s assertiveness or ability to manage stress.

**Practical Implications**

The findings from this study suggest that practitioners and supervisors should cautiously interpret preferences for multitasking when making performance evaluations. The study failed to demonstrate that congruence along this dimension would lead to increased ratings of job performance. Given the increased pace, competing demands, and countless distractors in today’s workplace it seems intuitive for a practitioner to consider polychronicity fit in the hiring or promotion process. While there is value in this line of thinking with relation to satisfaction and organizational commitment outcomes, the current body of literature along with this study suggests that there is not a defined relationship with job performance (Hecht & Allen, 2005; Slocombe & Bluedorn, 1999).

The secondary implication for practitioners is that when attempting to predict polychronicity, personality matters. The current study replicated findings that suggest that personality variables, such as the big five, could be valid predictors of polychronicity. Supervisors interested in predicting an employee’s or candidate’s relative value for multitasking as part of promotion or hiring decision should consider personality variables.

**Limitations and Future Directions**

When interpreting the results of this study, a number of limitations should be considered. Firstly the sample utilized in analysis was a law enforcement agency. Inwald (1985) noted that psychological tests and screening processes are not well understood for law enforcement and that supervisors tend to offer few negative performance ratings. A second
limitation related to the sample was that the study was essentially entirely male with little ethnic diversity, resulting in findings being derived from one demographic group. Taken together, it is likely that generalizing results to the population should be done with caution. A final limitation could be the use of an indirect assessment of fit. This method involves assessing respondents on both fit predictors of interest. The counter approach is a direct assessment of fit, which asks respondents to assess their level of fit on single questionnaire. While both methods are considered valid, measures of perceived fit have been found to have stronger relationships with a number of outcome variables (Kristof, et al., 2005).

Future research involving polychronicity should consider a more diverse organization or perhaps several organizations. At the time of this paper, I am unaware of any articles assessing fit on polychronicity and it’s relationship to performance using a direct method approach. Considering the strong results found using a direct approach, this could represent a critical next step in the study of polychronicity and job performance. Additionally, it may important for polychronicity researchers to consider a demands-ability fit model when studying job performance outcomes. Future research should consider one’s ability to actually multitask and the tasks being performed on the job utilizing demands-abilities fit theory. Finally, more work is needed in the area of potential mediating and moderating variables between polychronicity and personality.
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Table 1
*Factor Analysis of Task Performance*

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Commonalities</th>
</tr>
</thead>
<tbody>
<tr>
<td>This patrol member performs his/her job very well</td>
<td>.92</td>
<td>.79</td>
<td></td>
</tr>
<tr>
<td>All things considered, this patrol member is outstanding</td>
<td>.93</td>
<td>.86</td>
<td></td>
</tr>
<tr>
<td>This patrol member performs his/her job the way I like to see it performed</td>
<td>.92</td>
<td>.84</td>
<td></td>
</tr>
<tr>
<td>This patrol member is one of the agency's most valuable members</td>
<td>.85</td>
<td>.81</td>
<td></td>
</tr>
<tr>
<td>Scheduling</td>
<td>.88</td>
<td></td>
<td>.70</td>
</tr>
<tr>
<td>Problem Solving</td>
<td>.80</td>
<td></td>
<td>.72</td>
</tr>
<tr>
<td>Coaching Performance</td>
<td>.88</td>
<td></td>
<td>.71</td>
</tr>
<tr>
<td>Adaptability</td>
<td>.82</td>
<td></td>
<td>.66</td>
</tr>
<tr>
<td>Oral Communication</td>
<td>.77</td>
<td></td>
<td>.66</td>
</tr>
<tr>
<td>Written Communication</td>
<td>.55</td>
<td></td>
<td>.43</td>
</tr>
<tr>
<td>Cooperation</td>
<td>.76</td>
<td></td>
<td>.57</td>
</tr>
<tr>
<td>Integrity</td>
<td>.38</td>
<td></td>
<td>.43</td>
</tr>
<tr>
<td>Eigenvalue</td>
<td>6.68</td>
<td>1.49</td>
<td></td>
</tr>
<tr>
<td>Percent of variance explained</td>
<td>55.64%</td>
<td>12.42%</td>
<td></td>
</tr>
<tr>
<td>Correlation between factors</td>
<td>.60</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* Extraction Method: Principal Axis Factoring. Rotation Method: Promax (Oblique). Rotation converged in 3 iterations. The columns labeled Factor 1 and Factor 2 represent the factor loadings (regression coefficients). The final column represents the commonalities, or proportion of each variables variance that can be explained by the factors.
### Table 2
**Summary of Intercorrelations, Means, and Standard Deviations**

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Preferred Polychronicity</td>
<td>(.83)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Job Polychronicity Supplies</td>
<td>.42**</td>
<td>(.85)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Conscientiousness</td>
<td>.12*</td>
<td>.16**</td>
<td>(.87)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Extraversion</td>
<td>.12*</td>
<td>.19**</td>
<td>.42**</td>
<td>(.84)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Openness to Experience</td>
<td>.25**</td>
<td>.21**</td>
<td>.37**</td>
<td>.52**</td>
<td>(.82)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Agreeableness</td>
<td>.11</td>
<td>.00</td>
<td>.49**</td>
<td>.31**</td>
<td>.34**</td>
<td>(.80)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Neuroticism</td>
<td>-.13*</td>
<td>-.07</td>
<td>-.60**</td>
<td>-.49**</td>
<td>-.45**</td>
<td>-.65**</td>
<td>(.88)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Least Preferred Coworker</td>
<td>.01</td>
<td>-.06</td>
<td>.01</td>
<td>.00</td>
<td>.08</td>
<td>.02</td>
<td>-.03</td>
<td>(.96)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Overall Performance</td>
<td>.05</td>
<td>.08</td>
<td>.14*</td>
<td>-.02</td>
<td>-.04</td>
<td>.01</td>
<td>.01</td>
<td>-.08</td>
<td>(.95)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Current Performance</td>
<td>.02</td>
<td>.03</td>
<td>.07</td>
<td>-.07</td>
<td>-.08</td>
<td>.04</td>
<td>.03</td>
<td>-.09</td>
<td>.60**</td>
<td>(.92)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Promotion Potential</td>
<td>.07</td>
<td>.11</td>
<td>.09</td>
<td>.02</td>
<td>-.06</td>
<td>-.02</td>
<td>.04</td>
<td>-.08</td>
<td>.84**</td>
<td>.69**</td>
<td>(.96)</td>
<td></td>
</tr>
<tr>
<td>12. Organizational Citizenship Behavior</td>
<td>.04</td>
<td>.03</td>
<td>.07</td>
<td>-.06</td>
<td>-.01</td>
<td>.04</td>
<td>.04</td>
<td>.01</td>
<td>.69**</td>
<td>.62**</td>
<td>.70**</td>
<td>(.96)</td>
</tr>
</tbody>
</table>

**Note.** Numbers along the diagonal are Cronbach’s coefficient alpha values. Subordinates provided ratings for preferred and job polychronicity, the big five personality variables, and the least preferred coworker scale. Immediate supervisors provided ratings for overall performance, current performance, promotion potential, and organizational citizenship behavior. Each measure was on a 7-point Likert scale with the exception of least preferred coworker (8) and current performance (6). *p < .05 **p < .01.
Table 3
Results of Polynomial Regressions of Performance Indicators and NS Fit for the Construct of Polychronicity

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Predictors</th>
<th>Shape along P=PS line</th>
<th>Shape along P=-PS line</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>P</td>
<td>PS</td>
<td>P²</td>
</tr>
<tr>
<td>Overall performance</td>
<td>.122</td>
<td>-.262</td>
<td>-.030</td>
</tr>
<tr>
<td>Current Performance</td>
<td>.087</td>
<td>-.035</td>
<td>.012</td>
</tr>
<tr>
<td>Promotion potential</td>
<td>.148</td>
<td>-.232</td>
<td>-.049</td>
</tr>
<tr>
<td>Citizenship Behavior</td>
<td>.138</td>
<td>-.198</td>
<td>.000</td>
</tr>
</tbody>
</table>

*Note. P, preferred polychronicity, PS, polychronicity supplies, P², preferred polychronicity squared, P x PS, interaction of preferred polychronicity and polychronicity supplies and PS², polychronicity supplies squared. Values under predictors are unstandardized regression coefficients. R² values indicate the variance explained by the five predictors entered simultaneously. Values under a₁ and a₂ indicate the slope and curvature of the line of perfect agreement, respectively. Values under a₃ and a₄ indicate the slope and curvature of the line of misfit or incongruence, respectively. Preferred polychronicity and polychronicity supplies were centered for the purposes of polynomial regression only. **p < .05 **p < .01
Table 4
*The Big Five as Predictors of Preferred Polychronicity, Regressed Separately*

<table>
<thead>
<tr>
<th>Variable</th>
<th>$\beta$</th>
<th>$t$</th>
<th>$p$</th>
<th>$R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conscientiousness</td>
<td>.12</td>
<td>2.23</td>
<td>.03</td>
<td>.02*</td>
</tr>
<tr>
<td>Openness to Experience</td>
<td>.25</td>
<td>4.58</td>
<td>.00</td>
<td>.06**</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>.11</td>
<td>1.89</td>
<td>.06</td>
<td>.01</td>
</tr>
<tr>
<td>Neuroticism</td>
<td>-.13</td>
<td>-2.28</td>
<td>.02</td>
<td>.02*</td>
</tr>
<tr>
<td>Extraversion</td>
<td>.12</td>
<td>2.07</td>
<td>.04</td>
<td>.01*</td>
</tr>
</tbody>
</table>

*Note. df = 316.*

*p < .05 **p < .01

Table 5
*The Big Five as Predictors of Preferred Polychronicity, Multiple Regression*

<table>
<thead>
<tr>
<th>Variable</th>
<th>$B$</th>
<th>SE $B$</th>
<th>$\beta$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conscientiousness</td>
<td>.09</td>
<td>.16</td>
<td>.04</td>
</tr>
<tr>
<td>Openness to Experience</td>
<td>.46</td>
<td>.12</td>
<td>.25**</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>.03</td>
<td>.16</td>
<td>.01</td>
</tr>
<tr>
<td>Neuroticism</td>
<td>.00</td>
<td>.15</td>
<td>.00</td>
</tr>
<tr>
<td>Extraversion</td>
<td>-.06</td>
<td>.13</td>
<td>-.03</td>
</tr>
</tbody>
</table>

$R^2$ .06**

*Note. df = 311.*

*p < .05 **p < .01
Figure 1. Response surface plot between person-job fit on polychronicity and overall performance.
Figure 2. Response surface plot between person-job fit on polychronicity and promotion potential
Figure 3. Response surface plot between person-job fit on polychronicity and organizational citizenship behavior.
Figure 4. Response surface plot between person-job fit on polychronicity and current performance
Appendix A

Inventory of Polychronic Values (IPV)

Instructions: The following questions deal with your individual preferences on how you like to do work. Please indicate the extent to which you agree or disagree with the following statements.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Somewhat Disagree</th>
<th>Slightly Disagree</th>
<th>Neither Agree or Disagree</th>
<th>Slightly Agree</th>
<th>Somewhat Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>

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 (reverse coded).
3. I prefer to do one thing at a time (reverse coded).
4. I seldom like to work on more than a single task or assignment at the same time (reverse coded).
5. I would rather complete parts of several projects every day than complete an entire project.
Appendix B

Modified Inventory of Polychronic Values

Instructions: The following questions deal with how your job requires you to do work. In other words, how does the job you hold require you to work regardless of your personal preference?

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Somewhat Disagree</th>
<th>Slightly Disagree</th>
<th>Neither Agree or Disagree</th>
<th>Slightly Agree</th>
<th>Somewhat Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>

1. This job demands that I juggle several activities at the same time.
2. On the job, I am required to complete entire projects everyday rather than completing parts of several projects (reverse coded).
3. It is typical of this job to have many tasks to complete.
4. When doing this job, work must be done one thing at a time (reverse coded).
5. This job requires me to complete one task before starting another (reverse coded).
6. On this job, I am required to complete parts of several projects everyday rather than completing an entire project.
7. This job requires people to do many things at once.
8. On the job, I am frequently asked to start new tasks when other tasks have not yet been finished.
9. This job often requires that I spend a little bit of time on several-tasks-moving back and forth from on thing to another.
10. The demands of this job are such that I repeatedly have to switch gears from one task to another.
Appendix C

International Personality Item Pool (IPIP) - Conscientiousness

Please indicate the extent to which you agree or disagree with the following statements.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Somewhat Disagree</th>
<th>Slightly Disagree</th>
<th>Neither Agree or Disagree</th>
<th>Slightly Agree</th>
<th>Somewhat Agree</th>
<th>Strongly Agree</th>
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</table>

1. Am always prepared.
2. Pay attention to details.
3. Get chores done right away.
4. Like order.
5. Follow a schedule.
6. Am exacting in my work.
7. Do things according to a plan.
8. Continue until everything is perfect.
9. Make plans and stick to them.
10. Like to tidy up.
12. Find it difficult to get down to work (reverse coded).
13. Do just enough work to get by (reverse coded).
14. Don’t see things through (reverse coded).
15. Shirk my duties (reverse coded).
17. Leave things unfinished (reverse coded).
18. Don’t put my mind on the task at hand (reverse coded).
19. Make a mess of things (reverse coded).
20. Need a push to get started (reverse coded).
Appendix D

International Personality Item Pool (IPIP)- Extraversion

Please indicate the extent to which you agree or disagree with the following statements.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Somewhat Disagree</th>
<th>Slightly Disagree</th>
<th>Neither Agree or Disagree</th>
<th>Slightly Agree</th>
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1. Am the life of the party.
2. Feel comfortable around people.
4. Talk to a lot of different people at parties.
5. Don’t mind being the center of attention.
7. Take charge.
8. Know how to captivate people.
9. Feel at ease with people.
10. Am skilled in handling social situations.
11. Don’t talk a lot (reverse coded).
12. Keep in the background (reverse coded).
13. Have little to say (reverse coded).
14. Don’t like to draw attention to myself (reverse coded).
15. Am quiet around strangers (reverse coded).
16. Find it difficult to approach others (reverse coded).
17. Often feel uncomfortable around others (reverse coded).
18. Bottle up my feelings (reverse coded).
19. Am a very private person (reverse coded).
20. Wait for others to lead the way (reverse coded).
Appendix E

International Personality Item Pool (IPIP)- Openness to Experience

Please indicate the extent to which you agree or disagree with the following statements.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Somewhat Disagree</th>
<th>Slightly Disagree</th>
<th>Neither Agree or Disagree</th>
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<th>Somewhat Agree</th>
<th>Strongly Agree</th>
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1. Believe in the importance of art.
2. Have a vivid imagination.
3. Tend to vote for liberal political candidates.
4. Carry the conversation to a higher level.
5. Enjoy hearing new ideas.
7. Can say things beautifully.
8. I catch onto things quickly.
9. Get excited by new ideas.
10. Have a rich vocabulary.
11. Am not interested in abstract ideas (reverse coded).
12. Do not like art (reverse coded).
13. Avoid philosophical discussions (reverse coded).
14. Do not enjoy going to art museums (reverse coded).
15. Tend to vote for conservative political candidates (reverse coded).
16. Do not like poetry (reverse coded).
17. Rarely look for a deeper meaning in things (reverse coded).
18. Believe that too much tax money goes to support artists (reverse coded).
19. Am not interested in theoretical discussions (reverse coded).
20. Have difficulty understanding abstract ideas (reverse coded).
Appendix F

International Personality Item Pool (IPIP) - Agreeableness

Please indicate the extent to which you agree or disagree with the following statements.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Somewhat Disagree</th>
<th>Slightly Disagree</th>
<th>Neither Agree or Disagree</th>
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1. Have a good word for everyone.
2. Believe that others have good intentions.
3. Respect others.
4. Accept people as they are.
5. Make people feel at ease.
6. Am concerned about others.
7. Trust what people say.
8. Sympathize with others' feelings.
9. Am easy to satisfy.
10. Treat all people equally.
11. Have a sharp tongue (reverse coded).
12. Cut others to pieces (reverse coded).
13. Suspect hidden motives in others (reverse coded).
14. Get back at others (reverse coded).
15. Insult people (reverse coded).
16. Believe that I am better than others (reverse coded).
17. Contradict others (reverse coded).
18. Make demands on others (reverse coded).
20. Am out for my own personal gain (reverse coded).
Appendix G

International Personality Item Pool (IPIP)- Neuroticism

Please indicate the extent to which you agree or disagree with the following statements.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Somewhat Disagree</th>
<th>Slightly Disagree</th>
<th>Neither Agree or Disagree</th>
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1. Often feel blue.
2. Dislike myself.
3. Am often down in the dumps.
4. Have frequent mood swings.
5. Panic easily.
6. Am filled with doubts about things.
7. Feel threatened easily.
8. Get stressed out easily.
9. Fear for the worst.
10. Worry about things.
11. Seldom feel blue (reverse coded).
12. Feel comfortable with myself (reverse coded).
13. Rarely get irritated (reverse coded).
15. Am very pleased with myself (reverse coded).
16. Am relaxed most of the time (reverse coded).
17. Seldom get mad (reverse coded).
18. Am not easily frustrated (reverse coded).
19. Remain calm under pressure (reverse coded).
20. Rarely lose my composure (reverse coded).
Appendix H

Least Preferred Coworker Scale

Think of the person with whom you can work least well. He or she may be someone you work with now or someone you knew in the past. That person does not have to be the person you like the least but should be the person with whom you had the most difficulty in getting a job done. Describe this person as he or she appears to you by circling the appropriate number for each of the following items.

1. Pleasant 8 7 6 5 4 3 2 1 Unpleasant
2. Friendly 8 7 6 5 4 3 2 1 Unfriendly
3. Rejecting 1 2 3 4 5 6 7 8 Accepting
4. Tense 1 2 3 4 5 6 7 8 Relaxed
5. Distant 1 2 3 4 5 6 7 8 Close
6. Cold 1 2 3 4 5 6 7 8 Warm
7. Supportive 8 7 6 5 4 3 2 1 Hostile
8. Boring 1 2 3 4 5 6 7 8 Interesting
9. Quarrelsome 1 2 3 4 5 6 7 8 Harmonious
10. Gloomy 1 2 3 4 5 6 7 8 Cheerful
11. Open 8 7 6 5 4 3 2 1 Closed
12. Backbiting 1 2 3 4 5 6 7 8 Loyal
13. Untrustworthy 1 2 3 4 5 6 7 8 Trustworthy
14. Considerate 8 7 6 5 4 3 2 1 Inconsiderate
15. Nasty 1 2 3 4 5 6 7 8 Nice
16. Agreeable 8 7 6 5 4 3 2 1 Disagreeable
17. Insincere 1 2 3 4 5 6 7 8 Sincere
18. Kind 8 7 6 5 4 3 2 1 Unkind
Appendix I

Overall Performance Measure

Please indicate the extent to which you agree or disagree with the following statements.

<table>
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<th>Strongly Disagree</th>
<th>Somewhat Disagree</th>
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1. This patrol member performs his/her job very well.
2. All things considered, this patrol member is outstanding.
3. This patrol member performs his/her job the way I like to see it performed.
4. This patrol member is one of the agency's most valuable members.
Appendix J

Current Performance Measure

For TIDE ratings respondents were asked if they had observed the subordinate performing each task and then were prompted to rate their overall need for improvement on the dimension (one rating per dimension).

“Compared to the ideal level of performance the for [name of dimension], this patrol member’s performance is in need of __________ improvement.”

<table>
<thead>
<tr>
<th>A great deal of</th>
<th>A considerable amount of</th>
<th>A moderate amount of</th>
<th>A small amount of</th>
<th>Hardly any</th>
<th>Absolutely No</th>
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Scheduling

1. Assigns court dates to members.
2. Prepares and distributes members' work schedules.
3. Updates schedules in CAD based on weekly activity reports.
4. Notifies Administrative Services of requests for limited duty.
5. Reviews schedules considering fairness, accuracy, and appropriateness of work distribution.
6. Takes into consideration any special events, or campaigns, that may require additional manpower as well as training needs and schedules.
7. Schedules annual equipment certification renewals (e.g., equipment and personnel certification).
8. Attempts to accommodate patrol members' schedules in the event a personal emergency situation arises.
9. Checks schedules and weekly activity forms for accuracy and enters all necessary information in CAD.
10. Participates in coordinating the Patrol's response to critical incidents and the carrying out of special duties.

Problem solving

1. Determines causes and effects of key events and actions and works with employees to determine appropriate solutions and improvements.
2. Implements critical incident plans when necessary.
3. Determines appropriate actions and responds as necessary.
4. Determines need to inform supervisor of unusual incidents.
5. Monitors operations of districts, listens to radio traffic, assesses criticality of activities and determines when troop commander action is necessary.
6. Makes and justifies decisions regarding allocation of manpower.
7. Reviews reports from subordinates and traffic/accident data in order to make decisions about necessary actions.

Coaching performance

1. Communicates with employees on a continuous basis regarding performance.
2. Communicates with employees on a continuous basis regarding issues and concerns.
3. Encourages, motivates, counsels, and gives commendations to members.
4. Encourages, motivates, counsels, and gives commendations to civilian subordinates.
5. Delegates appropriate tasks to subordinates.
7. Reviews policies, procedures, and goals set by Strategic Plan with employees, monitoring data and goal progress on a continuing basis.
8. Identifies and develops employees for the next management level.
10. Evaluates members’ performance in key job responsibilities and performance areas, completing performance record.
12. Ensures that all employees have required training and that training is conducted uniformly across employees.
13. Identifies opportunities for “on-the-job” training for employees, providing mentoring and advice as needed (when applicable).
14. Provides training/learning opportunities by coordinating training schedules with the Training Academy and conducting formal “classroom” type training sessions and specialized classes.
15. Identifies training needs of employees in response to performance issues or policy violations.
16. Provides informal training to members who request assistance.
17. Observes performance on an ongoing basis.
18. Discusses performance ratings with subordinate.

Adaptability

1. Responds to and assists in critical incident crash activities (e.g., chase that ends in a crash with serious personal injury and/or fatality, crash involving hazardous materials, crash with three (3) or more fatalities, major road closures as a result of a crash, crashes involving law enforcement members, in custody deaths, and member assaults or injuries).
2. Responds to disasters as specified in (law enforcement agency) disaster recovery plans by assisting in evacuations.
3. Maintains a high level of preparedness for critical incidents at all times (e.g., active shooter, shooting incident, manhunt, natural/manmade disasters, terrorism, civil disturbance).
4. Coordinates, collaborates and participates in disaster response.
5. Monitors environment for potential threats or hazards.
6. Ensures that effective critical incident plans (e.g., Continuity of Operations Plan, Unusual Occurrences Manual, EOC operations plan, I-40 reversal plan, Troop coastal regional
evacuation plans, nuclear evacuation plans, LMS evacuation plans) are in place and that the (law enforcement agency) is prepared to respond to events in accordance with plans.

Oral communication

1. Takes calls, questions, and complaints from the public and responds appropriately.
2. Receives incoming assignments via radio and/or email and maintains communication with the communication center by speaking in a clear and concise voice.
3. When necessary, utilizes language interpreter.
4. Reports on the completion of activities.
5. Communicates with supervisors, other law enforcement, public agencies, and public/judicial officials as necessary.
6. Conducts meetings and serves as point of contact when needed.
7. Communicates and maintains professional working relationship with the media.
8. Coordinates efforts of other members at the scene.
9. Directs troopers to areas needing attention over radio.
10. Provides technical support to the traffic member in the field.
11. Maintains ongoing communication with employees.
12. Always speaks in a clear, concise voice.

Written communication

1. Updates and maintains e-policy.
2. Reads and signs all e-policy.
3. Maintains access to law information.
4. Reads and responds to email correspondence.
5. Presents information in a logical order in all written and email correspondence.
6. Expresses thoughts unambiguously in all written and email correspondence.
7. States thoughts and information in a concise manner in all written and email correspondence.

Cooperation

1. Maintains good working relationship with other federal, state and local law enforcement.
2. Maintains good working relationship with media.
3. Maintains good working relationship with emergency response agencies.
4. Coordinates and/or participates in member assistance teams (MAT) functions.
5. Collaborates with districts and agencies as required by specific events and campaigns.

Integrity

1. Uses professionalism/courtesy at all stops.
2. Maintains public image of (law enforcement agency) as an effective and professional organization.
3. Treats other patrol members with the highest degree of respect.
4. Follows the rules of the job.
5. Informs supervisor of inappropriate behavior of other patrol members.
6. Treats all patrol members equally.
7. Treats all individuals fairly.
Appendix K

Promotion Potential Measure

Please indicate the extent to which you agree or disagree with the following statements.

<table>
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1. This member is ready to be promoted to the next rank.
2. I would highly recommend this member for promotion.
3. This member needs more experience in his/her current rank (reverse coded).
4. This member will succeed in the next rank if he/she is promoted.
5. This member has enough experience in his/her current rank to be promoted to the next rank.
6. This member will be able to effectively supervise his or her subordinates in the next rank.
7. This member has a lot to learn before he/she can succeed in the next rank (reverse coded).
8. This member deserves to be promoted to the next rank.
9. This member tends to put extra time and effort into his/her work.
10. This member will be able to meet the challenges of the next rank.
11. If the roles were somehow reversed and this member had been my supervisor, I would have performed better.
12. Of all the members I have known, this member will be far more successful as a supervisor than most.
Appendix L

Civic Virtue, Altruism, & Courtesy

The statements below are concerned with current behaviors your candidate demonstrates in the workplace. Please use the given scale to indicate the extent to which you agree or disagree with each statement.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
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</table>

Civic Virtue

1. Attends meetings that are not mandatory, but are considered important.
2. Attends functions that are not required, but help the company image.
3. Keeps abreast of changes in the organizations.
4. Reads and keeps up with organization announcements, memos, and so on.

Altruism

1. Helps other who have been absent.
2. Helps others who have heavy workloads.
3. Helps orient new people even though it is not required.
4. Willingly helps others who have work related problems.
5. Is always ready to lend a helping hand to those around him/her.

Courtesy

1. Takes steps to try to prevent problems with other workers.
2. Is mindful of how his/her behavior affects other people’s jobs.
3. Does not abuse the rights of others.
4. Tries to avoid creating problems for coworkers.
5. Considers the impact of his/her actions on coworkers.
Appendix M

Thesis Proposal

A Study of Polychronicity and its Relationship to Personality and Job Performance: Does Person-Job Fit on Polychronicity Predict Multiple Indicators of Job Performance?

by

Gary Igor Travinin

A proposal submitted to the Graduate Faculty of North Carolina State University in partial fulfillment of the requirements for the Degree of Master of Science

Psychology

Raleigh, North Carolina

2015

APPROVED BY:

Dr. S. Bartholomew Craig  Dr. Adam W. Meade

Dr. Mark A. Wilson

Chair of Advisory Committee
A Study of Polychronicity and its Relationship to Personality and Job Performance: Does Person-Job Fit on Polychronicity Predict Multiple Indicators of Job Performance?

We each have unique preferences for how we like to complete work tasks, assignments, and duties but despite our preferences our environment may not always be conducive to our style of work. Hecht and Allen (2005) questioned their readers on how they would approach reading their paper. Would they switch between reading it and performing different tasks or would they finish it in one sitting before moving onto something new? Regardless of your own approach, your work environment or job characteristics may dictate how you end up actually reading the paper through the presence of distractions and other priority demands. If people’s attitudes on how they prefer to do work differ from how their environment allows them to do it, they will experience a sense of incongruity. This incongruity could negatively impact job-relevant outcomes (Edwards, 1996; Kristof, 1996; Kristof-Brown, Zimmerman & Johnson, 2005; Arthur, Bell, Villado & Doverspike, 2006).

The purpose this paper is to test whether congruence or fit on polychronicity, an attitudinal variable regarding one’s preference for performing work, predicts job performance.

Figures 1 and 2 illustrate the proposed relationships of this investigation. The focus of the current study relates to the fit between individual preferences for work and the perceived job characteristics present to fulfill them, often referred to as need-supplies fit (Edwards, 1991). More specifically I will examine whether fit on measures of preferred polychronicity and job supplies for polychronic behavior are related to higher levels of job performance. This research not only attempts to establish a clearer understanding of polychronicity and its relationship to performance but also addresses the lack of interactionist research on this focal construct by testing the effects of person-job fit (Hecht & Allen, 2005; König and Waller,
Literature on person-job fit has shown that fit between job qualities or demands and relevant dimensions of abilities, knowledge, skills, needs, preferences and values relate to outcomes such as organizational commitment, job satisfaction, intent to quit, and job performance (Edwards, 1996; Kristof, 1996; Kristof-Brown et al., 2005). I will also explore a more complete operationalization of job performance in relation to polychronicity. Past research on the relationship between polychronicity and performance has primarily used one measure of job performance (Massey, 2002; Hecht, 2003; Arndt, Arnold, & Landry, 2006; Nonis, Teng & Ford, 2005; Bluedorn, 2007; König and Waller, 2010; Woods, 2014). Taking advantage of a simultaneous promotion management project conducted by North Carolina State University with a state law enforcement agency I will be able to assess a more complete operationalization of job performance. This study is the first to examine person-job fit on polychronicity using supervisory ratings, response surface methodology, and multiple indicators of job performance.

This study also expands the nomological network of polychronicity by exploring the predictive ability of the big five personality variables and the potential mediating effect of being task or relationship oriented. More specifically I will examine if the big five are statistically significant predictors of polychronicity and whether the proposed relationship between extraversion and polychronicity is explained through participants scores on the least preferred coworker scale, an indicator of if one has a relationship or task oriented style. Past research examining the big five and polychronicity is limited with results being mixed (König & Waller, 2010; Sanderson, 2013). No study to date has tested the proposed mediating effect of being task or relationship oriented on the relationship between extraversion and polychronicity.
In order to better understand the examination of the proposed models I first present an overview of the focal construct of polychronicity as well as its relationship with performance. Secondly I provide a brief review of person-job fit, more specifically the needs-supplies component, and its relationship to performance. I then talk about the proposed relationship between person-job fit on polychronicity and how it may impact job performance. Next, I will discuss personality variables as a predictor of polychronicity as well as the possible mediating effect of being relationship oriented. I conclude with a detailed discussion of the sample, methodology, and analysis I will use to explore the proposed relationships.

**Polychronicity**

Hall (1959) is credited with first introducing the concept of polychronicity while studying various cultures’ use of time (Slocombe & Bluedorn, 1999; Hecht & Allen, 2005). There is disagreement in the literature about the definition of polychronicity (Bluedorn, Kalliat, Strube, and Martin, 1999; Conte & Gintoft, 2005; Hecht & Allen, 2005, König & Waller, 2010); I chose to adopt the suggestion of König and Waller (2010), defining polychronicity as the preference or value for doing several things at the same time. This definition “avoids any assumption about the judgments of others by high-polychronicity individuals” and draws an important differentiation between the preference or value for doing several things (polychronicity) and the observable behavior of doing several things (multitasking) (König & Waller, 2010, p. 175). Unfortunately research examining polychronicity and performance has produced mixed findings, with studies having found positive relationships (Arndt et al., 2006; Conte & Gintoft, 2005), negative relationships (Conte & Jacobs, 2003; Harris & Wiggins, 2008), and no relationship (Payne & Philo, 2002; Turner, Grube, Tinsley, Lee, & O’Pell, 2006), using various measures of performance (e.g.,
self-rated, supervisor ratings, grade point average, simulation tasks). König and Waller (2010) suggested that this disparity in findings may be due to the various interpretations of the construct or that polychronicity may impact performance but only if there is a “fit” between person and job polychronicity levels. The latter explanation drives the research in the current study; this person-job fit research design for examining polychronicity and performance is considered the next frontier for the construct (König & Waller, 2010).

**Needs-Supplies Person-Job Fit**

Edwards (1991) defined needs-supplies person-job fit (NS fit) as the congruence between the desires of a person and the attributes of a job, referring to whether or not the job has the opportunities to satisfy the needs, values, or preferences of the person (Hecht & Allen, 2005). “Needs” refer to the desires, preferences, motives, and goals of the individual while “supplies” refer to the perceived qualities of the job that may fulfill these needs (Edwards, 1996). Research on NS fit has generally shown that when supplies or opportunities provided by the job to fulfill needs, values or preferences are lacking one can expect poor job outcomes (Kristof, 1996; Edwards, 1996; French, Caplan & Harrison, 1982; Hecht & Allen, 2005). NS fit is typically studied in relation to attitudinal elements such as job satisfaction, organizational commitment, and psychological strain. Studies have also found that it can have an impact on several other job outcomes as well such as job performance, intent to quit, and absenteeism (Kristof et al., 2005; Shaw, Duffy & Stark, 2000). Cable and DeRue (2002) identified in their review that the existing literature had not properly explored the explanatory power of NS fit versus other fit perceptions.

**Fit on Polychronicity and Performance**
This study theorizes that person-job fit on the needs-supplies component, specifically the opportunities for polychronicity on the job (supplies) and the individual’s preference for polychronic behavior (needs) will lead to higher levels of job outcomes (Kristof, 1996; Kristof et al., 2005; Edwards, 1996; Slocombe & Bluedorn, 1999; Hecht & Allen, 2005). This fit can occur along a continuum at any point in-between two extremes, polychronic and monochronic fit. Polychronic fit occurs when the person values or prefers to do many things at once and has the opportunities to do so through the job while monochronic fit occurs when the person prefers not to do many things at once and his or her job does not provide opportunities to do so (Hecht & Allen, 2005). Misfit occurs when one’s preference for multitasking behavior is different from the opportunities provided by the job (Hecht & Allen, 2005). This misfit may occur in either direction with either too few opportunities (insufficient supplies) or too many opportunities (excess supplies). Consistent with previous research I can hypothesize that excess supplies of polychronicity opportunities will not lead to higher levels of the outcome variables (Slocombe & Bluedorn, 1999; Hecht & Allen, 2005).

The current study adds a unique contribution to the literature by examining needs-supplies fit on the dimension of polychronicity using supervisory ratings of performance, response surface methodology, and multiple indicators of job performance (task performance, organizational citizenship behavior, and promotion potential). Few studies have examined fit on polychronicity and its relationship to job performance, with existing work utilizing self-rated measures of performance (Hecht, 2003; Woods, 2014) and difference scores in analysis (Massey, 2002). Past research has also only utilized one indicator of job performance. Overall results of these three studies are mixed with more research needed using response surface methodology, supervisory ratings of performance, and industry
samples. To date there are no studies examining multiple indicators of job performance in relation to fit on polychronicity.

**Hypothesis 1.** Greater needs-supplies person-job fit (congruence) between preferred polychronicity and polychronicity supplies will be related to higher levels of task performance (H1a), promotion potential (H1b), and citizenship behaviors (H1c) than will misfit or incongruence.

**Personality Variables as Predictors of Polychronicity**

The secondary aim of this study is to replicate past research in examining the big five as predictors of polychronicity with an industry sample (law enforcement). The literature examining the big five as predictors of polychronicity is small with results largely being inconclusive (König & Waller, 2010; Sanderson, 2013). In her 2013 dissertation, Sanderson conducted a meta-analysis on the small number of studies available examining at least one aspect of the big five and polychronicity and was able to identify statistically significant relationships with extraversion and openness to experience. The current study will explore each variable of the big five and it’s relationship to polychronicity. I also offer a unique contribution by examining a potential mediator between extraversion and polychronicity.

Conscientiousness reflects dependability, being careful, thorough, responsible, organized while also including volitional elements such as hardworking, achievement-oriented, and persevering (Barrick & Mount, 1991). Conscientiousness was hypothesized as being negatively related to polychronicity by Hall (1983), who identified polychronic individuals as less-schedule, less-appointment, and less-deadline oriented. While this negative relationship has been found by some the research so far is inconclusive or
statistically negligible (König & Waller, 2010; Conte & Gintoft, 2005; Conte & Jacobs, 2003; Kantrowitz, Grelle, Beaty, & Wolf, 2012; Sanderson, 2013).

**Hypothesis 2a.** Conscientiousness will be negatively related to polychronicity (H2a).

Openness to experience reflects traits such as being imaginative, cultured, curious, and broad minded (Barrick & Mount, 1991). Generally research examining the big five and polychronicity hasn’t found any statistically significant relationships with openness to experience (König & Waller, 2010; Conte & Gintoft, 2005; Conte & Jacobs, 2003). Two recent studies did however find evidence for a positive relationship between openness to experience and polychronicity (Kantrowitz et al., 2012; Sanderson, 2013).

**Hypothesis 2b.** Openness to experience will be positively related to polychronicity (H2b).

Personality traits associated with being courteous, flexible, trusting, forgiving, or tolerant are interpreted as agreeableness (Barrick & Mount, 1991). Haase, Lee, and Banks (1979) noted that polychronicity was related to tolerance for ambiguity as well as an unstructured work environment (Sanderson, 2013). While some research has failed to find any statistically significant relationships between agreeableness and polychronicity (König & Waller, 2010; Conte & Gintoft, 2005; Conte & Jacobs, 2003), others have found partial support for a positive relationship (Kantrowitz et al., 2012; Sanderson, 2013). It is reasonable to assume that polychronic individuals may exhibit higher levels of agreeableness.

**Hypothesis 2c.** Agreeableness will be positively related to polychronicity (H2c).

Low emotional stability or neuroticism is associated with feelings of anger, depression, embarrassment, worry, and insecurity (Barrick & Mount, 1991). Previous research suggests that individuals who are anxious will likely not perform well in
multitasking environments (Oswald, Hambrick, and Jones, 2007, Sanderson, 2013). Despite research failing to establish a statistical link between neuroticism and polychronicity, it seems reasonable to assume those who exhibit high levels of neuroticism will not have polychronic work habits (König & Waller, 2010; Conte & Gintoft, 2005; Conte & Jacobs, 2003, Sanderson, 2013).

**Hypothesis 2d.** Neuroticism will be negatively related to polychronicity (H2d).

Extraversion is often associated with being assertive, talkative, and active (Barrick & Mount, 1991). A degree of being sociable and expressive is also generally considered indicative of this dimension of the big five (Hogan, 1986). Polychronic individuals are thought to be more relationship oriented rather than task focused (Hall, 1983). Existing research has found support for a positive relationship between extraversion and polychronicity (König & Waller, 2010; Kantrowitz et al., 2012; Conte & Gintoft, 2005; Conte & Jacobs, 2003).

**Hypothesis 2e.** Extraversion will be positively related to polychronicity (H2e).

Interestingly, Hall’s (1983) suggestion that polychronic individuals are more relationship-oriented has never been empirically tested (König & Waller, 2010). Sanderson (2013) also called for future research to begin examining moderating and mediating effects between personality variables and polychronicity. The current study explores one style toward being relationship-oriented as a potential mediator of the relationship between extraversion and polychronicity.

**Hypothesis 3a.** The relationship between extraversion and polychronicity is explained through polychronic individuals being relationship oriented (H3a).

**Method**
Sample

This study will use archival data collected in the spring of 2014 as part of the management promotion system for a state law enforcement agency. Troopers (N=330) responded to the questions about polychronicity, personality, and their least preferred coworker (LPC) as part of a promotion process developed by Dr. Mark Wilson of North Carolina State University (NCSU). Polychronicity, LPC, and citizenship measures used for this assessment were added to the existing promotion tool for the purposes of this paper. Immediate supervisors provided performance ratings electronically. See Table 1 for a brief review of each measure and its source.

Measures

**Preferred polychronicity and job polychronicity supplies.** The standard questionnaire for measuring preferred polychronicity is the inventory of polychromic values (IPV) developed and validated by Bluedorn and colleagues (1999). The IPV was added into the promotion management assessment and completed by troopers. This measure is typically 10 items and uses a 7-point Likert scale that ranges from 1 (*strongly disagree*) to 7 (*strongly agree*). In order to maintain consistency with the definition of polychronicity, I adopted the suggestions of König and Waller (2010) and removed items related to self-reported multitasking and beliefs that others should work in a multitasking style. This resulted in a 5-item measure, which König and Waller (2010) retested using two datasets from past research and found it to have a Cronbach’s alpha of .80 and .77, suggesting acceptable reliability. Higher scores indicate higher levels of polychronicity. See Appendix A for the full measure.

To measure job polychronicity supplies I used a modified version of the IPV from Hecht and Allen (2005), who altered each item to reflect opportunities for polychronic work
and found the scale to have a Cronbach’s alpha of .81. Since this scale measures the perceived characteristics of the job and is not intended to measure personal beliefs about how others should complete work, all 10 items were included. This inclusion is supported by similarly designed past research (Slocombe & Bluedorn, 1999). This measure uses a 7-point Likert Scale and response options range from 1 (strongly disagree) to 7 (strongly agree), with higher scores indicating greater job polychronicity supplies. See Appendix B for the full measure.

Conscientiousness. Items for this personality dimension are drawn from the International Personality Item Pool and were a part of the original management promotion assessment completed by troopers (IPIP; Goldberg, 1999). This measure has 20 items and uses a 7-point Likert Scale. Response options range from 1 (strongly disagree) to 7 (strongly agree) with higher scores indicating greater conscientiousness and a Cronbach’s alpha between .88 and .90. See Appendix C for the full measure.

Extraversion. Items for this personality dimension are drawn from the IPIP and were a part of the original management promotion assessment completed by troopers (IPIP; Goldberg, 1999). This measure has 20 items and uses a 7-point Likert scale. Response options range from 1 (strongly disagree) to 7 (strongly agree) with higher scores indicating greater extraversion ($\alpha = .91$). See Appendix D for the full measure.

Openness to experience. Items for this personality dimension are drawn from the IPIP and were a part of the original management promotion assessment completed by troopers (IPIP; Goldberg, 1999). This measure has 20 items and uses a 7-point Likert scale. Response options range from 1 (strongly disagree) to 7 (strongly agree) with higher scores indicating greater openness to experience ($\alpha = .89$). See Appendix E for the full measure.
Agreeableness. Items for this personality dimension are drawn from the IPIP and were a part of the original management promotion assessment completed by troopers (IPIP; Goldberg, 1999). This measure has 20 items and uses a 7-point Likert scale. Response options range from 1 (strongly disagree) to 7 (strongly agree) with higher scores indicating greater agreeableness (α = .85). See Appendix F for the full measure.

Neuroticism. Items for this personality dimension are drawn from the IPIP and were a part of the original management promotion assessment completed by troopers (IPIP; Goldberg, 1999). This measure has 20 items and uses a 7-point Likert scale. Response options range from 1 (strongly disagree) to 7 (strongly agree) with higher scores indicating greater neuroticism (α = .91). See Appendix G for the full measure.

Least preferred coworker. In order to identify if respondents are relationship or task oriented I used the LPC scale developed by Fiedler, Chemers & Mahar (1984), which was added to the management promotion assessment and completed by troopers. Normally used in leadership research, the LPC asks the respondent to think of a coworker they work least well with on getting a job done. This measure has demonstrated strong internal consistency and a single factor structure (Rice, 1978). They are then given 18 opposing items (e.g. untrustworthy and trustworthy) and asked to describe this person by assigning an appropriate number for each of the items (e.g. 1= unkind to 8= kind). Higher scores on the LPC suggest that the respondent is relationship-oriented while lower scores indicate the respondent is task motivated or exhibits lower levels of being relationship-oriented. See Appendix H for the full measure.

Task performance. In order to measure task performance two criterion variables completed by supervisors from the management promotion system will be combined in order
to create a 12-item measure. The North Carolina State University team conducting the
development of the Management Promotion System adapted the measure for overall
performance from the work of Chan and Schmitt (2002) and Podsakoff and Mackenzie
(1994). The measure contains 4 items and uses a 7-point Likert Scale. Response options
range from 1 (strongly disagree) to 7 (strongly agree) with higher scores indicating greater
performance. See Appendix I for the full measure. Current performance was measured using
8 items reflecting dimensions identified during the work analysis phase of the Management
Promotion System. Dimensions were identified using reviews of other police agencies,
previous performance dimensions for the law enforcement organization, and results from the
work analysis. Ratings were gathered using Overall Task Identified Dimensional Evaluation
(TIDE). TIDE ratings are on a 6-point Likert scale from 1 (a great deal) to 6 (absolutely no)
when rating how much improvement their promotion candidate needed on the dimension.
Higher scores were indicative of high performing candidates. See Appendix J for sample
items. A description of each performance dimension can be found below:

**Scheduling.** This performance dimension measures the ability to effectively assign
personnel to tasks and appropriately.

**Problem solving.** These skills are reflective of identifying problems and their causes,
evaluating courses of action, and making decisions.

**Coaching performance.** This performance dimension indicates the ability to establish
procedures to monitor, review, evaluate actions of subordinates and develop
subordinates professionally.

**Adaptability.** The individual’s ability to adjust to novel information and experiences
in a changing environment is measured with this performance dimension.
Oral communication. This performance dimension measures the ability to relay information in individual and group settings effectively.

Written communication. Written communication is the ability to effectively convey expression in writing and relaying information in a concise manner.

Cooperation. This performance dimension reflects the individual’s ability to work well with others from both inside and outside of the organization.

Integrity. Integrity is the degree to which the individual applies the knowledge and values of the organization to all situations.

Promotion potential. A measure of promotion potential was used from the management promotion system, which was completed by supervisors. Current promotability measures of the law enforcement agency were deemed to be insufficient by the North Carolina State University team so new items were written using previous literature on promotion potential (de Pater, van Vianen, Bechtoldt, & Klehe, 2009; Harris, Kacmar, & Carlson, 2006; Jawahar & Ferris, 2011; Shaughnessy, Treadway, Breland, Williams, & Brouer, 2011). The measure contains 12 items and uses a Likert scale. Response options range from 1 (strongly disagree) to 7 (strongly agree) with higher scores indicating greater promotion potential. See Appendix K for the full measure.

Organizational citizenship behaviors. In order to measure organizational citizenship behavior I used a scale from Podsakoff, MacKenzie, Moorman, and Fetter (1990), which was added to the management promotion system and completed by supervisors. This scale was identified as “especially suitable for use in situations in which interpersonal relations, cooperation, and team work are critical issues” (Van Dyne, Graham & Dienesch, 1994, p. 795). Discussions with project leaders of the trooper promotion initiative identified
three relevant dimensions for inclusion: civic virtue ($\alpha = .70$, responsible for, is involved in, or concerned about the organization), altruism ($\alpha = .85$, helping others with organizationally relevant tasks), and courtesy ($\alpha = .85$, behaviors that prevent work related problems). The measure contains 5 items each for courtesy and altruism and 4 items for civic virtue. The instrument uses a Likert scale where response options range from 1 (strongly disagree) to 7 (strongly agree) with higher scores indicating greater levels of citizenship behaviors. See Appendix L for the full measure.

**Proposed Analyses**

Both polychronicity variables will be averaged across the scale items to create an overall score. For the purposes of the polynomial regression analysis only, I will scale-center the predictor variables (preferred polychronicity and polychronicity supplies) in order to reduce multicollinearity and aid with interpretation (Kristof & Stevens, 2001; Shanock, Baran, Gentry, Pattison & Heggestad, 2010). Given that the predictor variables are on a 1 to 7 scale, I will center by subtracting the scale midpoint to create a -3 to 3 range. Personality variables will be averaged across each dimension to create an overall score. As recommended by Fiedler et al. (1984), an overall score for the LPC scale will be created using the item total. A factor analysis will be performed on the proposed task performance variables to test a one-dimension structure pattern before creating an overall score. Overall scores for the remaining criterion variables (promotion potential and organizational citizenship behaviors) will be created using the mean.

Hypotheses 1a-1c state that needs-supplies fit on polychronicity will be related to higher levels of performance than will misfit or incongruence. In order to test these hypotheses I will use polynomial regression with response surface methodology (Edwards &
Parry, 1993). First I will run descriptive statistics for the entire sample identifying means, standard deviations, and correlation matrices. Using SPSS software I will next run a polynomial regression to calculate the surface values. This is accomplished by regressing each performance outcome variable on five predictor variables: preferred polychronicity, polychronicity supplies, preferred polychronicity squared, the product of preferred polychronicity and polychronicity supplies and polychronicity supplies squared. This will result in three regression equations each with the same five predictor variables but different a performance outcome. The squared and product variables will need to be computed in SPSS prior to running the regression. The resulting regression coefficients are examined based on four test values: slope ($a_1$) and curvature ($a_2$) of the perfect agreement line and slope ($a_3$) and curvature ($a_4$) of the line of misfit. The line of fit or perfect agreement depicts the various levels of the outcome variables (job performance) for those participants whose level of the two predictor variables is essentially the same across the continuum, including perfect polychronic and perfect monochronic fit (Edwards, 1993; Edwards, 2002; Shanock et al., 2010). The line of misfit or incongruence depicts how discrepancies between the two predictor variables influence the outcome variables (Edwards, 1993; Edwards, 2002; Shanock et al., 2010). The slope of the line of perfect agreement is calculated as $a_1 = (b_1 + b_2)$ where $b_1$ is the unstandardized beta coefficient for preferred polychronicity and $b_2$ is the unstandardized beta coefficient for polychronicity supplies (Edwards, 1993; Shanock, 2010). The curvature along the line of fit is calculated as $a_2 = (b_3 + b_4 + b_5)$ where $b_3$ is the unstandardized beta coefficient for preferred polychronicity squared, $b_4$ is the unstandardized beta coefficient for the product of preferred polychronicity and polychronicity supplies and $b_5$ is the unstandardized beta coefficient for polychronicity supplies squared (Edwards, 1993;
Shanock, 2010). Slope and curvature for the line of misfit or incongruence are also calculated using the unstandardized beta coefficients but the equations for these are $a_3 = (b_1 - b_2)$ for the slope and $a_4 = (b_3 - b_4 + b_5)$ for the curvature (Edwards, 1993; Shanock, 2010). Formulas for calculating the significance values of these slopes and curvatures are provided in Shanock et al. (2010) and are determined by the calculation of standard errors based on the variance of linear combinations of random variables (Edwards, 1993; Hecht & Allen, 2005). Finally I will plot the relevant surfaces using excel, see Figure 3 for an example. Shanock et al., (2010) provide step-by-step instructions on how to plot three-dimensional surfaces using excel formulas and the regression coefficients produced by SPSS.

I will examine the plots, the slope and curvature of both the line of perfect agreement and the line of misfit, please see Table 2 for an example of the regression results. For the line of perfect fit if the curvature line ($a_2$) is non-significant this indicates a linear relationship with the slope ($a_1$) determining the direction of the relationship. That is the outcome either increases (positive slope) or decreases (negative slope) as the predictor variables in perfect agreement increase. For hypotheses H1a through H1c I anticipate the curvature line to be non-significant but I also anticipate the slope to be non-significant. This is because polychronicity is a continuum variable with fit existing in both the monochronic and polychronic directions. Thus I anticipate a uniform fit relationship along the continuum of polychronicity. For the line of incongruence or misfit a negative statistically significant curvature line ($a_4$) line indicates a concave surface where the outcome variable decreases as discrepancy in both directions increases. A positive statistically significant curvature line would indicate a convex surface where the outcome variable increases as discrepancy increases. The slope ($a_3$) of the line of incongruence allows us to examine the directionality
of the discrepancy on the outcome variable. For the current study I anticipate a statistically significant negative curvature line ($a_4$), indicating a concave surface, where misfit in either direction equally lowers the outcome variable of job performance ($a_3$ non-significant).

This technique addresses many of the weaknesses of difference scores and allows the researcher to obtain a much more complete image of the underlying relationship (Edwards & Parry, 1993; Edwards, 2002; Kristof, 2005). The concept behind this approach is that these person-job fit comparisons should be viewed three-dimensionally versus two-dimensionally. This approach is highly recommended when the researcher is hoping to achieve precise comparisons involving fit on values, goals and preferences that are accessed indirectly, i.e. with two separate measures (Kristof, 2005). The approach fundamentally departs from difference scores by not condensing fit into a single score and instead using higher order terms in the form of an unconstrained equation to create unique variables for the person, job, and the criterion allowing for the creation of three dimensional surface plots.

Hypotheses 2a through 2e state that the big five personality variables will be statistically significant predictors of polychronicity. In order to test the relationship between conscientiousness, extraversion, openness to experience, neuroticism, agreeableness and polychronicity five standard linear regressions will be used. This form of regression allows the researcher the ability to determine the amount of the variance explained by each variable as well as providing an ANOVA table that reports how well the regression equation fits the data. Interpretation will take place by examining $R^2$ values, the amount of variance explained in the dependent variable, standardized beta coefficients and statistical significance levels. For the current study I anticipate a statistically significant positive relationship between extraversion, openness to experience, agreeableness and polychronicity. Higher levels of
each variable will correspond to higher levels of preferred polychronicity. I also anticipate a statistically significant negative relationship between conscientiousness, neuroticism, and polychronicity. Higher levels of each personality variable will correspond to lower levels of preferred polychronicity.

Hypothesis 3a states that scores on the LPC will mediate the relationship between extraversion and polychronicity. In order to test this mediation analysis I will use the procedures outlined by Baron and Kenny (1986), which use regression to identify mediation. The first step is covered above in that a relationship between extraversion and polychronicity must be found. Secondly, a simple linear regression between extraversion and the LPC is performed. Thirdly the relationship between LPC and polychronicity is tested. Finally I regress polychronicity on both extraversion and the LPC. The Sobel test, which uses unstandardized coefficients and standard errors, will be used to test whether the relationship between extraversion and polychronicity has been reduced by a statistically significant amount with the addition of the LPC (Sobel, 1982). For the current study I anticipate that the effects of extraversion on polychronicity will be mediated by the LPC such that the Sobel test is statistically significant. Scores on the LPC measure will positively and statistically significantly predict polychronicity while extraversion will no longer be statistically significant (H3a).

While the Sobel test is considered appropriate for simple mediation analysis I will also test Hypothesis 3a using the PROCESS approach as created by Hayes (2012). This new computational tool for SPSS combines many of the popular approaches to mediation analysis into one procedure. While this tool can also estimate the Sobel test, simple mediation is tested using asymmetric bootstrap confidence intervals to examine the significance of the
indirect effect of the predictor variable on the outcome through the mediator. I anticipate I will find a significant indirect effect of extraversion on polychronicity given one’s score on the LPC such that extraversion will be related to higher levels of polychronicity as a result of the effect of scores on the LPC.
Figure 1. Proposed relationships for hypothesis 1a-1c between person-job fit on polychronicity and job performance outcomes.
Figure 2. Proposed relationships for hypothesis 2a-2e and 3a between personality variables and preferred polychronicity.
<table>
<thead>
<tr>
<th>Construct</th>
<th>Added to management promotion system?</th>
<th>Measure description and citation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preferred polychronicity</td>
<td>Y</td>
<td>Inventory of Polychronic Values (IPV) (Bluedorn et al., 1999)- Appendix A</td>
</tr>
<tr>
<td>Job polychronicity supplies</td>
<td>Y</td>
<td>Modified IPV (Hecht &amp; Allen, 2005)- Appendix B</td>
</tr>
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<td>Conscientiousness</td>
<td>N</td>
<td>International personality item pool (IPIP) (Goldberg, 1999)- Appendix C</td>
</tr>
<tr>
<td>Extraversion</td>
<td>N</td>
<td>International personality item pool (IPIP) (Goldberg, 1999)- Appendix D</td>
</tr>
<tr>
<td>Openness to experience</td>
<td>N</td>
<td>International personality item pool (IPIP) (Goldberg, 1999)- Appendix E</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>N</td>
<td>International personality item pool (IPIP) (Goldberg, 1999)- Appendix F</td>
</tr>
<tr>
<td>Neuroticism</td>
<td>N</td>
<td>International personality item pool (IPIP) (Goldberg, 1999)- Appendix G</td>
</tr>
<tr>
<td>Least preferred coworker</td>
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<td>Least preferred coworker scale (Fiedler &amp; Chemers, 1984)- Appendix H</td>
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<td>Promotion potential</td>
<td>N</td>
<td>Developed by NCSU¹- Appendix K</td>
</tr>
<tr>
<td>Organizational citizenship behavior</td>
<td>Y</td>
<td>Civic virtue, altruism, and courtesy (Podsakoff et al., 1990)- Appendix L</td>
</tr>
</tbody>
</table>

*Note. 1) Items written using previous literature on promotion potential (de Pater, van Vianen, Bechtoldt, & Klehe, 2009; Harris, Kacmar, & Carlson, 2006; Jawahar & Ferris, 2011; Shaughnessy, Treadway, Brelangd, Williams, & Brouer, 2011) 2) 8 dimensions of current performance identified through work analysis.*
Table 2

Results from regressions of performance indicators and NS fit for the construct of Polychronicity

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Predictors</th>
<th>Shape along P=PS line</th>
<th>Shape along P= -PS line</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>P</td>
<td>PS</td>
<td>$P^2$</td>
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<tr>
<td>Task performance</td>
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<td>Promotion potential</td>
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<tr>
<td>Citizenship Behavior</td>
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</tbody>
</table>

Note. P, preferred polychronicity, PS, polychronicity supplies, $P^2$, preferred polychronicity squared, $P \times PS$, interaction of preferred polychronicity and polychronicity supplies and $PS^2$, polychronicity supplies squared. Values under predictors are unstandardized regression coefficients. $R^2$ values indicate the variance explained by the five predictors entered simultaneously. Values under $a_1$ and $a_2$ indicate the slope and curvature of the line of perfect agreement, respectively. Values under $a_3$ and $a_4$ indicate the slope and curvature of the line of misfit or incongruence, respectively.
Figure 3. An example plot from Edwards & Parry (1993) displaying a convex surface. X and Y would be preferred polychronicity and polychronicity supplies in the proposed study. Z is the outcome variable in the regression.