Spring 5-2022

Assessing Employees' Perceptions of the Frequency and Intensity of Workplace Interpersonal Conflict in Lateral and Hierarchical Dyads

Matthew Shayne Castillo

ASSESSING EMPLOYEES' PERCEPTIONS OF THE FREQUENCY AND INTENSITY OF WORKPLACE INTERPERSONAL CONFLICT IN LATERAL AND HIERARCHICAL DYADS

by

Matthew Castillo, B.A., M.S., M.A.

A Dissertation Presented in Partial Fulfillment
of the Requirements of the Degree
Doctor of Philosophy

COLLEGE OF EDUCATION
LOUISIANA TECH UNIVERSITY

May 2022

LOUISIANA TECH UNIVERSITY

GRADUATE SCHOOL

February 15, 2022
Date of dissertation defense

We hereby recommend that the dissertation prepared by

Matthew Shayne Castillo

entitled **Assessing Employees' Perceptions of the Frequency and Intensity of Workplace Interpersonal Conflict in Lateral and Hierarchical Dyads**

be accepted in partial fulfillment of the requirements for the degree of

Doctor of Philosophy in Industrial/Organizational Psychology

M. Apter-Desselles
Marita Apter-Desselles
Supervisor of Dissertation Research

M. Apter-Desselles
Marita Apter-Desselles
Head of Psychology and Behavioral Science

Doctoral Committee Members:
./Steven Toaddy
Frank Igou

Approved:

Don Schillinger
Don Schillinger
Dean of Education

Approved:

Ramu Ramachandran
Dean of the Graduate School

GS Form 13a
(01/20)

ABSTRACT

Workplace interpersonal conflict has been identified as a potential major source of stress for several occupations. Occupational stress literature concerning this stressor reveals that interpersonal conflict can have adverse outcomes for organizations including absenteeism, turnover, and workers' compensation claims for psychological injury. Accordingly, researchers have developed measures aimed at capturing perceptions of workplace interpersonal conflict to remediate and prevent it in organizations. Although workplace interpersonal conflict has received considerable attention, there is little research assessing perceptions of conflict from a dyadic perspective in lateral (coworker-coworker) and hierarchical (supervisor-subordinate) relationships between supervisors and non-supervisors. This is important because conflict may be perceived more frequently or intensely between two individuals, compared to a group or organizational team, based on previous research indicating that individuals perceive and experience conflict differently in dyads and groups. The Workplace Interpersonal Conflict Scale was used to compare perceptions of the frequency and intensity of lateral and hierarchical workplace interpersonal conflict among supervisors and non-supervisors in various industries, providing further validity evidence for the instrument. It was expected that supervisors in hierarchical relationships would perceive the most frequent and intense conflict with a subordinate. However, results revealed that participants (i.e., supervisors and non-supervisors) in hierarchical relationships, regardless of whether they were higher

or lower in the hierarchy, perceived significantly more frequent conflict than participants in lateral relationships with no significant differences for conflict intensity. An interpretation of the findings is provided in addition to limitations and future directions of the study.

APPROVAL FOR SCHOLARLY DISSEMINATION

The author grants to the Prescott Memorial Library of Louisiana Tech University the right to reproduce, by appropriate methods, upon request, any or all portions of this Dissertation. It is understood that "proper request" consists of the agreement, on the part of the requesting party, that said reproduction is for his personal use and that subsequent reproduction will not occur without written approval of the author of this Dissertation. Further, any portions of the Dissertation used in books, papers, and other works must be appropriately referenced to this Dissertation.

Finally, the author of this Dissertation reserves the right to publish freely, in the literature, at any time, any or all portions of this Dissertation.

Author _____

Date _____

DEDICATION

First and foremost, I dedicate this work to my mother, Rhonda Annette Howell. You are the strongest and most resilient woman I know. It is true what they say - the strength of a mother is second to none. I have watched you overcome challenging obstacles that may have knocked you down at times, but you always held your head high and never gave up. Now I know where my unyielding perseverance comes from. We are more alike than I ever cared to admit, which is probably why we haven't always seen eye to eye. It is crazy to think that it took a global pandemic for me to realize what was truly important in life and how much I needed you. Kate Winslet said that it doesn't matter how old you are, or what you do in life, you never stop needing your mom. I will forever believe that. We are closer now than we have ever been, and for that I am most grateful. You might not have understood why I chose to dedicate ten years of my life to earning a doctorate, but you supported me every step of the way. And now, finally, the journey is coming to an end. Thank you and I love you – as high as the sky and as deep as the sea.

To my younger siblings, Caleb and Naomi, I will repeat what I said in my thesis acknowledgment five years ago – you can achieve anything you set your minds to, never forget that. I have thoroughly enjoyed watching you grow into the people you are now. You amaze me every day with how smart, kind, and funny you are, and I am truly blessed to be your big brother. I love you both and I will always be here for you no matter what.

To my stepdad, Ray, thank you for being the rock of this family and for loving mom's boys as if they were your own. You have done so much for Caleb and I and have always had an open heart and an open door. I can't thank you enough for being there any time we needed and for stepping in when Dad passed away to make sure we were taken care of. I may not be the easiest person to get to know or get along with, but you have never stopped trying or let it affect how you treated me. You always have a smile on your face and are one of the most genuine people I know. I have seen you go out of your way to help others and I know you would give the shirt off your back to a stranger because that is just the kind of person you are. I don't say it enough, but I love you and I appreciate you. Thank you for everything.

Finally, to my fiancé Kyle, I can't wait to marry you! It's a crazy world we are living in these days, and I wouldn't want to have anybody else by my side to go through it with. Fate brought us together when we needed each other the most, and God knew the path we would eventually walk together long before either of us figured it out. You have helped me grow in so many ways and taught me things I never knew I needed to be taught. I am a better person because of you. We complement each other in the best ways, and I am excited to continue building our life together. Our future is bright, even when it may not seem so, and nothing is going to stop us from achieving our dreams. Words cannot express how thankful I am for you. You are my whole world. I love you so much.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

ACKNOWLEDGMENTS

I'd like to start off by thanking my dissertation chair, Dr. Mitzi Apter-Desselles, for all her guidance, wisdom, and – most of all – patience in helping me complete this dissertation. We jumped through a few hoops, and did a lot of sprinting along the way, but our hard work finally paid off. Thank you for everything, Mitzi. I have thoroughly enjoyed working with you over the past several years. Congratulations on your promotion to full Professor. It was more than deserved. Although slightly skeptical at first, you have turned me into a staunch advocate for reversal theory. I make sure I educate fellow I-O psychologists everywhere I go about it and its usefulness for managers and organizations. You have helped me grow in so many more ways than I ever could have imagined, and I hope to continue making you proud throughout the rest of my career. Thank you, again, for helping me along the arduous journey to complete this dissertation. I couldn't have done it without you.

I would also like to thank my committee members, Dr. ./Steven Toaddy and Dr. Frank Igou, for their feedback and suggestions. You certainly gave me plenty of food for thought and, ultimately, helped improve my study beyond anything I could have done alone. Thank you, both.

CHAPTER 1

INTRODUCTION

Interpersonal conflict, or conflict between two or more individuals, is a prevalent workplace stressor related to adverse outcomes for employees and organizations including negative affect, reduced performance, and turnover (Wright et al., 2015; 2017). The 2008 Global Human Capital Report by CPP, Inc. (now the Myers-Briggs Company) found that U.S. employees spent an average of about 2 hours per week involved in and/or managing conflict, translating to over $350 billion in paid hours per year (CPP, Inc., 2008). Further, previous organizational surveys reveal that employees spend up to 42%, and managers up to 20%, of their time on conflict-related issues (Gupta et al., 2011). More recently, Wright et al. (2017) asserts that employees reported occurrences of interpersonal conflict on 50% of workdays. Interpersonal conflict has been identified as one of the largest reducible costs, and most important stressors to address, in organizations (Wright et al., 2017). Accordingly, conflict was considered a prevalent workplace stressor and numerous conflict measures were developed to capture perceptions of workplace interpersonal conflict (WIC) to understand how to reduce it (Bergmann & Volkema, 1994; Jehn, 1995; Spector & Jex, 1998; Wright et al., 2017). However, Wright and his colleagues (2017) assert that measures available in extant literature lack rigorous psychometric analyses and validation evidence, hindering their ability to accurately measure specific elements of conflict that have been identified by the

literature subsequent to their development. For example, some measures consider a wider range of behaviors that are considered conflict (i.e., mild disagreements, sabotage, verbal and/or physical intimidation) and have been evaluated under different levels of scrutiny (concurrent, convergent, and/or discriminant validation; Wright et al., 2017). Based on research providing clarity on how the construct of WIC is currently defined and understood (see Barki & Hartwick, 2004, and Weingart et al., 2015, for reviews), Wright et al. (2017) developed the Workplace Interpersonal Conflict Scale (WICS) to examine perceptions of the frequency of conflict and conducted in-depth psychometric analyses across three occupational samples.

Conflict is a dynamic process resulting from an individual's perceptions, emotions, and the information acquired (Weingart et al., 2015). However, most studies on conflict in work settings have been conducted at the group level with organizational teams and workgroups (Anicich et al., 2016; Lu et al., 2011). As such, there is little research assessing conflict from a dyadic perspective (see for examples Kessler et al., 2013; Liu et al., 2015). Further, these studies either used qualitative methods or outdated conflict scales to capture the occurrence of WIC and did not compare lateral and hierarchical dyads. The goal of the present study was to compare perceptions of dyadic lateral and hierarchical WIC among supervisors and non-supervisors in various industries using the WICS to determine if there are differences in perceptions of conflict based on the type of dyad. Specifically, I explored whether perceptions of the frequency and intensity of WIC differ among supervisors in lateral relationships, non-supervisors in lateral relationships, supervisors in hierarchical relationships, and non-supervisors in hierarchical relationships. According to Dyadic Power Theory (Dunbar, 2004), equal and

unequal power dyads use different persuasion and control attempts to influence the behavior of another person which may result in perceptions of more frequent and intense conflict for dyads in disequilibrium.

Managers would benefit from knowledge regarding whether employees' perceptions of conflict frequency or intensity differ based on their job levels (supervisor or non-supervisor) and relationship types (lateral or hierarchical dyad) so they can foster productive working relationships in dyads with optimal perceptions as well as monitor collaboration and/or interactions between dyads with less optimal perceptions. This could help managers reduce the potential for undesired conflict perceptions and may also help prevent actual WIC episodes. Managers could also encourage task, relational, or procedural aspects of the work environment and/or organizational culture that complement desired conflict perceptions. Understanding if, and if so how, job levels and relationship types are related to conflict perceptions is imperative in determining if different perceptions are problematic within certain dyadic relationships or could be associated with actual episodes of conflict. If so, then managers could consider regulating the amount of collaboration or interactions between certain dyads as well as discussing perceptual differences of conflict between employees in a dyad which may help them find ways to resolve or manage actual conflicts.

CHAPTER 2

LITERATURE REVIEW

2.1 Early Organizational Conflict Research

Pondy (1967) developed a conceptual model of organizational conflict stemming from research on conflict in groups. He identified three types of organizational conflict: bargaining, bureaucratic, and systems. Bargaining conflict occurs in an interest-group relationship, bureaucratic conflict occurs among supervisors and subordinates, and systems conflict occurs among peers. Pondy (1967) viewed conflict as a dynamic process occurring across a series of interlocking episodes. However, he noted that stable patterns tend to appear across episodes. Pondy's goal was to understand how organizational members resolve conflicts by developing a model for each of the above types of conflict. He concluded that the effectiveness and appropriateness of conflict resolution techniques depend on both the nature of the conflict as well as individuals' philosophy of management.

Jehn (1997) provided an alternative model of intragroup conflict which also had three different types: relationship, task, and process conflict. Relationship conflict focuses on interpersonal connections, task conflict focuses on work goals, and process conflict focuses on how tasks are accomplished. Task and relationship conflict are the two main types of conflict that have received considerable attention in WIC literature (Jehn, 1997). Unlike previous studies that used survey methods to capture the dynamics

of conflict, Jehn's (1997) study used unobtrusive methods including observation. Her goal was to understand both the positive and negative aspects of conflict as well as the connection between perceptions and behavioral displays of conflict. She concluded that conflict is highly emotional with little potential for quick resolution.

Other research explored characteristics of how conflict was expressed, which resulted in two dimensions: directness and intensity of conflict (Brett et al., 1998). Directness of conflict refers to the degree to which an individual expresses conflict explicitly vs. implicitly (Weingart et al., 2015). An individual who vocalizes that there is a problem, makes the position they are taking clear, and expresses it directly to the other party is conveying conflict explicitly, making it easier to perceive (Beatty et al., 1999; Tinsley & Brett, 2001). Implicit expressions of conflict are characterized by more ambiguous language and passive behavior, allowing for more inference by the receiver. Intensity of conflict refers to the strength of conflict or opposition ranging from low (e.g., debates) to high (e.g., fights; Lee & Aaker, 2004). Although controversies exist in the literature concerning how to conceptualize conflict intensity, it is generally accepted that direct, low-intensity conflicts are the easiest to perceive and resolve (Weingart et al., 2015). The present study used a dyadic perspective to focus only on direct, or explicit, expressions of WIC among coworkers and supervisors due to their ease in being perceived as a conflict episode, which participants were asked to recall, compared to indirect expressions of conflict.

2.2 Interpersonal Conflict in Occupational Stress Literature

Although there are several definitions for WIC, it is defined in the present study as negative interpersonal encounters involving hostile exchanges between two employees

in an organization with opposing viewpoints advocating for different outcomes (Weingart et al., 2015). WIC became a popular topic in occupational stress literature following a reorientation in stress research to include both major and minor stressors (Bolger et al., 1989). The several conceptualizations and definitions of interpersonal conflict that exist in the literature demonstrate disagreement in what constitutes interpersonal conflict and how conflict is expressed in the workplace (see Weingart et al., 2015, for a review). However, Weingart et al. (2015) asserts that interpersonal conflict involves people with opposing viewpoints that advocate for different outcomes. WIC has been distinguished from other related constructs including workplace aggression, bullying, incivility, social undermining, and violence, which do not occur as frequently and are typically more severe in terms of emotional reactions and behavioral expressions (Hershcovis, 2011; Hershcovis et al., 2007; Notelaers et al., 2018).

Early studies assessing WIC focused on examining stress at work. Keenan and Newton (1985) used an open-ended, self-report measure of stress to examine stress among engineers. Results indicated that interpersonal conflict at work between superiors, subordinates, and colleagues was one of the most cited stressors. Narayanan et al. (1999) used the same methods as the above study and examined experiences of stress across clerical workers, university professors, and sales associates. They found that WIC was common across all three occupations. Women reported interpersonal conflict as the leading source of stress and men reported interpersonal conflict as the second leading source of stress among nine potential stressors for the clerical and academic groups (Narayanan et al., 1999). WIC was identified as a potential major source of stress among

other workplace stressors such as role ambiguity and work overload in the above studies (Jaramillo et al., 2011).

2.3 Perceptions of Workplace Interpersonal Conflict

Once interpersonal conflict was identified as a potential major stressor, researchers began taking a more in-depth look at individual differences in perceptions of interpersonal conflict (Graziano et al., 1996; Keenan & Newton, 1985; Narayanan et al., 1999; Parkes, 1986; Rudman, 1998; Ting-Toomey & Kurogi, 1998). Studies found that perceptions of interpersonal conflict can vary based on gender (Keenan & Newton, 1985; Parkes, 1986; Rudman, 1998), culture (Ting-Toomey & Kurogi, 1998), and personality (Graziano et al., 1996). Women tend to perceive interpersonal conflict as a source of stress more frequently than men (Narayanan et al., 1999). This could be due to several factors such as a differential impact on societal structure for men and women, the gendered expression of emotionality in organizations, or interpersonal relationships playing a greater role for women than men (Narayanan et al., 1999). Ting-Toomey and Kurogi (2009) assert that members of individualistic cultures tend to use more direct/explicit expressions of conflict whereas members of collectivistic cultures tend to use more indirect/implicit expressions of conflict. Individualists tend to adopt more confrontational tactics and dominating conflict styles while collectivists tend to adopt more relational smoothing tactics and avoidant/obliging conflict styles (Ting-Toomey & Kurogi, 2009). This could be due to cultural differences in interpretations of compromise and conflict management styles. These differences may be reflected in organizational cultures, which could influence employees' perceptions of conflict. Finally, the Big Five personality factor agreeableness appears to be related to interpersonal conflict in that

high-agreeable individuals tend to be better at regulating their emotions in situations involving conflict than low-agreeable individuals (Graziano et al., 1996). Agreeable people may be more motivated to maintain positive relationships with others compared with low-agreeable people and use more constructive conflict resolution tactics (Ilies et al., 2011). Further, a recent dissertation by Chung (2017) revealed that differences in personality traits between individuals in a dyad significantly affected their perceptions of conflict. Specifically, those high in agreeableness were less likely to perceive conflict while those high in extraversion were more likely to perceive conflict in dyadic relationships (Chung, 2017).

2.3.1 Dyadic vs Group-Level Perceptions of Conflict

Social cognitive theory (Bandura, 1999), as well as the social information processing approach (Salancik & Pfeffer, 1978), supports that individuals in organizations can have different experiences and perceptions of the same reality (Jehn et al., 2010). Although some researchers argue that groups possess shared properties, including perceptions (Cannon-Bowers et al., 1993; Kozlowski & Klein, 2000), others conclude that asymmetries of experiences and perceptions exist in groups (Carley & Krackhardt, 1996; Casciaro et al., 1999; Jehn et al., 2010). A recent review by Park et al. (2020) suggests that team members have unique conflict experiences and may perceive or experience different degrees of conflict with others. Further, different dyadic configurations within a team exhibit different interpersonal dynamics which, when dysfunctional, could result in conflict (Park et al., 2020). That is, conflict is likely not perceived uniformly across dyads within a team, challenging the assumption that team conflict is a shared phenomenon (Jehn & Chatman, 2000; Korsgaard et al., 2008). As

such, researchers have examined differences in perceptions and experiences of conflict in teams (Jehn et al., 2010; Weingart et al., 2015). However, these studies still aggregated varied team member perceptions into summary indices of conflict (Park et al., 2020). This is problematic because conflict relationships are complex and cannot be thoroughly conveyed by aggregated compositional statistical indices (Park et al., 2020). There is little research assessing WIC from a dyadic, and not a multilevel, perspective (see for example Kessler et al., 2013; Liu et al., 2015). A dyadic conceptualization of conflict may yield a more diverse set of factors to consider when examining conflict relationships compared to traditional team-based approaches (Park et al., 2020). Since dyadic relationships can generate different dynamics and consequences, including perceptions of conflict (Riaz & Junaid, 2011), the present study examined perceptions of WIC from a dyadic perspective.

2.4 Role Characteristics and Conflict

Previous research in the social-hierarchy literature supports that the emergence of interpersonal conflict is associated with role characteristics, including power (Anicich et al., 2016; Bruk-Lee & Spector, 2006; Frone, 2000; Graham et al., 2017; Hirsh et al., 2011; Sliter et al., 2011). That is, interpersonal conflict can be explained by a structural, role-based perspective in addition to the traditional person-based explanations (Anicich et al., 2016). This is important because, from a role-based perspective, supervisors compared to non-supervisors in lateral versus hierarchical relationships could also perceive the frequency and intensity of WIC differently, which may result in different outcomes (Sliter et al., 2011). Regarding different outcomes, researchers suggest that the effects of WIC on employees and organizations are different in the context of different

relationships (i.e., the type of dyadic relationship between the conflicting parties). Specifically, Frone's (2000) model of interpersonal conflict at work revealed that high levels of interpersonal conflict with coworkers is associated with low self-esteem (β = -.22) and high depression (β = .31) and somatic symptoms (β = .25) while high levels of interpersonal conflict with a supervisor is associated with high turnover intentions (β = .33) and low job satisfaction (β = -.44) and organizational commitment (β = -.49).

It is possible that structural factors, specifically an employee's position in an organization, offer a role-based account of perceptual differences in the frequency and intensity of WIC (Anicich et al., 2016). The social-hierarchy literature asserts that power can influence formal and informal relationships between individuals (Anicich et al., 2016; Frone, 2000). Power is defined as control over valued resources (Magee & Galinsky, 2008). Across five studies, Anicich and his colleagues (2016) found that individuals whose roles imparted power (i.e., having the power to hire and fire employees) had significantly different perceptions of interpersonal conflict compared to individuals whose roles did not impart power. Specifically, individuals who occupied a role that afforded power reported higher levels of interpersonal conflict than other organizational members (Anicich et al., 2016). Supervisors in organizations have more role-based power compared to non-supervisors (Graham et al., 2017). As such, supervisors likely experience more interpersonal conflict than non-supervisors and are expected to perceive higher frequency and intensity of WIC. Further, based on Dyadic Power Theory (Dunbar, 2004), unequal power dyads may perceive more frequent and intense conflict compared to equal power dyads. Thus, supervisors should also perceive more frequent and intense WIC in hierarchical, compared to lateral relationships.

2.5 Outcomes of Workplace Interpersonal Conflict

In addition to antecedents, including characteristics and perceptions, of interpersonal conflict, studies have looked at the impact of interpersonal conflict on individuals and organizations (Barling et al., 2009; Frone, 2000; Inoue & Kawakami, 2010; Kidder, 2007; McKenzie, 2015; Spector & Jex, 1998). Although some researchers have found that conflict in work groups and teams can be beneficial, such as improving decision-making, others conclude that it is generally harmful (Wright et al., 2017). A meta-analysis by Herschovis et al. (2007) asserted that interpersonal conflict has the strongest relationship with workplace aggression. Subsequent studies have found that WIC is associated with depression and violence (Barling et al., 2009; Inoue & Kawakami, 2010). Kidder (2007) suggested that stress associated with interpersonal conflict could result in damaged relationships and loss of productivity. A meta-analysis by Spector and Jex (1998) on conflict at work revealed that interpersonal conflict was negatively associated with job satisfaction ($\rho = -.32$) and positively associated with turnover intentions ($\rho = .41$) and depression ($\rho = .38$). Other studies found that interpersonal conflicts at work can have costly outcomes such as frequent absenteeism, employee turnover, and even workers' compensation claims for psychological injury (Frone, 2000; McKenzie, 2015).

2.6 Extant Measures of Workplace Interpersonal Conflict

Bergmann and Volkema (1994) assessed interpersonal conflict in the workplace with employees who had been, or were currently, involved in conflict using a critical-incident method via a five-page questionnaire. The instrument asked respondents about the other party involved in the conflict, what the conflict was about, and how they dealt

with the conflict from a list of 24 conflict responses. This was one of the first instruments created to measure the occurrence of WIC. However, the measure was not widely used, resulting in little validation evidence supporting it. Further, the analyses focused primarily on how individuals responded to WIC rather than how frequently conflict occurred or how intense the conflict episode was (Bergmann & Volkema, 1994; Wright et al., 2017).

Jehn (1995) developed the Intragroup Conflict Scale (ICS) to measure the amount of task and relationship conflict in work units. The instrument consisted of eight items measuring the presence of conflict on a five-point Likert scale ranging from 1 (*None*) to 5 (*A lot*). A sample item from the ICS is, "How much conflict about the work you do is there in your work unit?" Coefficient alphas for the task and relationship conflict scales were .87 and .92, respectively (Jehn, 1995). However, the items on the ICS ask about the entire work unit instead of perceptions of dyadic interactions. As such, the instrument is limited in examining specific aspects of conflict since they may be confounded with other group processes (Wright et al., 2017).

Spector and Jex (1998) created the Interpersonal Conflict at Work Scale (ICAWS) to assess how well employees get along with others at work. The instrument is a four-item, summated rating scale that asks respondents how often they get into arguments with others and how often others act disagreeably on a five-point Likert scale ranging from 1 (*Rarely*) to 5 (*Very often*). It is considered the most widely used and extensively psychometrically evaluated measure of WIC (Wright et al., 2017). However, the ICAWS does not include all the recently identified aspects of interpersonal conflict (see Barki & Hartwick, 2004, and Weingart et al., 2015, for reviews), such as goal impediments,

incompetence, and perceptions of injustice (Wright et al., 2017). As such, the measure is likely unable to capture WIC as it is currently defined and understood (Wright et al., 2017).

Finally, Wright and his colleagues developed the Workplace Interpersonal Conflict Scale (WICS; Wright et al., 2017) to address limitations of previous conflict measures. The WICS is a six-item, self-report measure that can be used to capture perceptions of the frequency of conflict in a variety of organizational contexts. As mentioned previously, it includes both task and relationship conflict, as well as elements not previously considered in prior measures, allowing for a more comprehensive assessment of WIC (Wright et al., 2017). When compared to previous instruments, including the ICS (Jehn, 1995) and ICAWS (Spector & Jex, 1998), the WICS exhibited significant improvements in correlations with important organizational, health, and safety outcomes (Wright et al., 2017). Further, regression analyses revealed additional incremental validity of the WICS above previous instruments demonstrating stronger predictive ability in the outcomes examined which suggests the WICS may be a better measure of WIC (Wright et al., 2017). This new measure addressed critical issues of concern in previous instruments including current conceptualization, process of measure development, and psychometric evaluation (Wright et al., 2017). It is intended for use in the assessment, remediation, and prevention of WIC in organizations. Psychometric properties of the instrument, including internal consistency reliability, construct validity, and criterion-related validity, were analyzed by Wright and his colleagues (2017) across three occupational samples: home care workers, food service workers, and a diverse online sample via Amazon Mechanical Turk (MTurk). The WICS demonstrated adequate

reliability and factor structure and may provide a better alternative to other measures (Wright et al., 2017). Coefficient alphas ranged from .88 to .92 (Wright et al., 2017). Further, all items strongly loaded on a single factor with factor loadings ranging from .80 to .91 (Wright et al., 2017). However, the WICS has not been used to assess perceptions of dyadic interpersonal conflict or make comparisons between lateral and hierarchical conflict perceptions.

2.7 Present Study

WIC perceptions were assessed from a dyadic perspective between supervisors and non-supervisors within various industries using the WICS (Wright et al., 2017). Moreover, as suggested by Weingart et al. (2015), conflict perceptions were measured in terms of the intensity of conflict in addition to the frequency of conflict. Although previous conflict studies have examined antecedents and outcomes of specific types of WIC (i.e., task, relationship, and/or process conflict), the conflict measures used often focused on conflict within existing work groups, rather than interpersonal or dyadic conflict, or were developed within specific organizational contexts (e.g., nursing staff; Wright et al., 2017). As such, the present study measured perceptions of the frequency and intensity of WIC in general using the WICS which was analyzed across multiple occupational samples and designed to capture conflict more comprehensively in the workplace (Wright et al., 2017). This study aimed to answer the research question: *do supervisors vs non-supervisors in lateral vs hierarchical relationships have significantly different perceptions of the frequency and intensity of dyadic workplace interpersonal conflict?* To answer this question, four groups were compared: supervisors in lateral relationships (supervisor-supervisor), non-supervisors in lateral relationships (non-

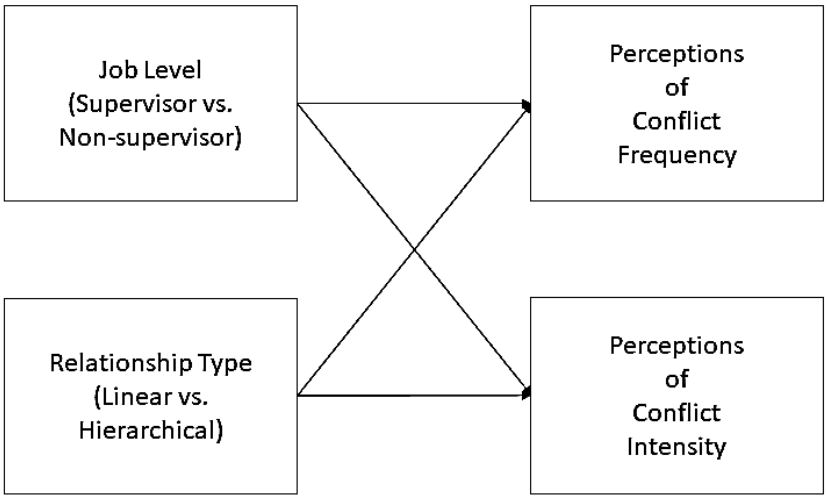
supervisor-non-supervisor), supervisors in hierarchical relationships (supervisor-non-supervisor), and non-supervisors in hierarchical relationships (non-supervisor-supervisor).

According to the model tested in this study (see Figure 1), participants' job level (supervisor or non-supervisor) and the relationship type of the dyad being examined (linear or hierarchical) should influence perceptions of the frequency and intensity of WIC. As mentioned previously, since supervisors have more role-based power compared to non-supervisors they should experience more interpersonal conflict and are expected to perceive higher frequency and intensity of WIC (Anicich et al., 2016; Graham et al., 2017). Further, based on Dyadic Power Theory (Dunbar, 2004), unequal power dyads may engage in more frequent and intense conflict compared to equal power dyads. As a result, supervisors should also perceive more frequent and intense WIC in hierarchical, compared to lateral relationships.

> *H1: There will be a significant interaction effect between job level and relationship type on conflict frequency and intensity. Specifically, supervisors in hierarchical relationships will perceive higher a) frequency and b) intensity of workplace interpersonal conflict compared to supervisors in lateral relationships, non-supervisors in lateral relationships, and non-supervisors in hierarchical relationships.*

Figure 1

Model for the Present Study



CHAPTER 3

METHOD

3.1 Participants

A total of 560 participants were recruited through Prolific, an online crowdsourcing platform shown to produce reliable and valid data comparable to Amazon's Mechanical Turk (MTurk) and university-student subject pools (Palan & Schitter, 2018; Peer et al., 2017; Peer et al., 2021). However, as will be discussed below, 110 respondents were removed from the study resulting in a sample of 450 participants retained for analysis. The average age of the retained sample was 32.6 years with ages ranging from 18 to 65 years old. Further, participants were 66.0% female (n = 297), 32.7% male (n = 147), and 1.3% nonbinary (n = 6). Regarding racial composition, 74.2% of participants were White or Caucasian (n = 334), 8.4% were Asian (n = 38), 6.9% were two or more races (n = 31), 5.3% were Black or African American (n = 24), 4.4% were Hispanic or Latino (n = 20), and 0.8% were American Indian or Alaska Native (n = 3). Regarding tenure, 18.4% of participants had been with their organization for less than a year (n = 83), 50.4% between one and five years (n = 227), 18.9% between six and ten years (n = 85), 6.2% between 11 and 15 years (n = 28), 3.1% between 16 and 20 years (n = 14), and 3.0% over 20 years (n = 13). Finally, participants worked an average of 39.6 hours per week with a range of 10 to 82 hours and the median and mode being 40 hours per week.

Prior to collecting data, a statistical power test was conducted to determine the minimum sample size required to have a 90% chance of detecting a significant effect, if one was present, using a multivariate analysis of variance (MANOVA). MANOVA was the statistical test used to compare the average perceptions of the frequency and intensity of WIC between supervisors in lateral relationships (supervisor-supervisor), non-supervisors in lateral relationships (non-supervisor-non-supervisor), supervisors in hierarchical relationships (supervisor-non-supervisor), and non-supervisors in hierarchical relationships (non-supervisor-supervisor). There is little guidance regarding the minimum sample size and statistical power needed for a two-factor MANOVA design (Cohen et al., 2003; Young, 2006). However, a dissertation study by Young (2006) revealed that the range of minimal sample sizes per factor in a MANOVA, given two dependent variables, with alpha = .05, power = .90, and effect size = .01 varied between 132-176 participants. Since the present study has two factors, that translated to a needed sample size between 264 and 352. Barends and de Vries (2019) suggest that online survey platforms typically see non-compliant response rates of approximately 20%, which would require at least 424 participants in the present study considering the maximum recommended sample size provided by Young (2006). However, Hong et al. (2020) asserts that insufficient effort responding (IER) in a given sample can reach up to 50%. As such, accounting for Young's (2006) recommendation, potential non-compliant and insufficient effort response rates suggested by Barends and de Vries (2019) and Hong et al. (2020), and incomplete or unusable data, the present study aimed to recruit 450 participants.

3.2 Measures

3.2.1 Demographics

Participants completed a demographics questionnaire regarding their gender, age, race, occupational status, job level (supervisor or non-supervisor), amount of tenure (in years), and number of hours worked per week (see Appendix A). These variables have been collected in similar previous studies assessing the frequency of WIC (Wright et al., 2017).

3.2.2 Frequency of Conflict

Perceptions of the frequency of WIC were assessed using the Workplace Interpersonal Conflict Scale (WICS; Wright et al., 2017; see Appendix B). This six-item instrument is a self-report measure developed to examine specific elements of conflict previously identified by literature (Barki & Hartwick, 2004). Respondents indicate how often they experienced WIC in the past 30 days on a scale from 1 (*Never*) to 5 (*Very often*). Higher scores on the WICS indicate higher levels of WIC. A sample item is "Had others yell at you at work". An empirical examination of psychometric properties including construct and criterion-related validity has been conducted (Wright et al., 2017). Internal-consistency reliability of the scale was measured across three studies with Cronbach's Alphas ranging from .88 to .92. To increase the sophistication of measurement, the five-point scale included conflict frequencies to guide participants' answers. *Never* was defined as zero times, *Almost never* as one or two times, *Sometimes* as three or four times, *Often* as five or six times, and *Very often* as more than six times.

Moreover, items were modified based on the job level of employees and the relationship type being examined. For non-supervisors, the word "others" was replaced

by “your supervisor” for hierarchical relationships. For non-supervisors in lateral relationships and supervisors in lateral and hierarchical relationships, respondents were asked to identify a) a fellow coworker who works under the same supervisor (non-supervisor-non-supervisor or supervisor-supervisor) or b) a subordinate who works directly under them (supervisor-non-supervisor). After identifying the referent, participants were instructed to write the initials of that referent (a fellow coworker or a subordinate) in an open-ended item on the questionnaire, “Please write the initials of the individual you have selected that fits the criteria specified above in the box below.” Piped text was used to insert the referent’s initials into all items on the WICS replacing the word “others” in each item from the original instrument with the referent’s initials. The above forms were converted to an electronic format using the survey software Qualtrics.

3.2.3 Intensity of Conflict

To add robustness to the WICS, perceptions of the intensity of conflict were measured by asking respondents to rate the intensity of conflict they experienced with their supervisor, subordinate, or coworker on a scale from 1 (*Not intense*) to 5 (*Very intense*). This additional measure was first proposed by Weingart et al. (2015). A “not applicable” anchor was also included for respondents who did not experience conflict over the past 30 days (see Appendix B).

3.3 Procedure

Participants were classified based on their job level (supervisor or non-supervisor) in their organization. Individuals with no direct reports were categorized as non-supervisors while those with one or more direct reports were categorized as supervisors. To ensure the necessary balance of participants in these two categories (50% supervisors

and 50% non-supervisors), two separate studies were set up on Prolific with one specifically targeting supervisors who had one or more direct reports and the other targeting non-supervisors who had no direct reports. Once the target number of participants was reached in either category, 225 supervisors and 225 non-supervisors, the Prolific study targeting that group of individuals was closed.

Participants were restricted to English-speaking, working adults over age 18 in the U.S. Further pre-screening via Prolific required participants to indicate that they had a colleague whom they spent most of their time at work with. Non-supervisors were also required to indicate that they had a direct supervisor at work and did not have any supervisory responsibilities (i.e., did not have authority to give instructions to subordinates). Supervisors were also required to indicate that they had supervisory responsibilities (i.e., had authority to give instructions to subordinates) and had at least one subordinate.

Prolific workers who met the requirements for the task, including age, language, location, employment status, and a high Prolific work approval rating (90% and above; Peer et al., 2014) were able to see this study in the “Studies” section of their participant account. Those who were interested in participating read the details of the study, including the informed-consent form, and were instructed to only accept the work assignment if they agreed to the specified terms. Participants were also instructed to not accept the work assignment if they did not agree to the consent form. Those who agreed to participate via the informed-consent statement and accepted the assignment were given a link to the survey platform Qualtrics where the study was administered. The consent

form explained in broad terms that the survey would include measures of workplace perceptions (see Appendix C).

Individuals whose work was accepted were compensated $2.67 for their participation. Buhrmester et al. (2016) suggests that data quality is not affected by payment levels. However, the amount was derived based on an hourly rate of $8.00, higher than the minimum wage of $7.25 per hour in the U.S. which has been used as a gauge in previous studies (Litman et al., 2015), multiplied by the amount of time needed to complete the study (i.e., 20 minutes or .333 hours). Those who did not meet the requirements of the study, did not submit a completed survey, or whose responses were flagged as non-compliant by statistical analyses, described in detail below, were not compensated. Clear instructions were provided to participants regarding how work acceptance or rejection was determined in the study details section of the initial work listing as recommended by McInnis et al. (2016).

The survey began with a reiteration of the criteria for work acceptance and rejection, followed by the survey instructions designed to place individuals in a specific frame of reference (Lievens et al., 2008; see Appendix C). Participants were instructed to recall their past 30 days at work and answer the survey items while thinking about either their supervisor, a peer, or a subordinate they interact with on a regular basis at work. Randomization was added to the study in the survey software Qualtrics wherein participants were randomly assigned to either the lateral or hierarchical dyad track of the study to recall conflict with either a peer or a supervisor or subordinate depending on their job level. Next, participants filled out the Workplace Interpersonal Conflict Scale (WICS; Wright et al., 2017) regarding perceptions of the frequency and intensity of WIC

(see Appendix B). To ensure that supervisors interpreted “a fellow supervisor”, and non-supervisors interpreted “a fellow coworker”, to indicate anyone at their exact organizational level, participants were instructed to answer the items based on an individual they work with on a regular basis who performs similar job duties and has similar positional power based on their organizational hierarchy. A “not applicable” anchor was included on the conflict-intensity scale for respondents who perceived zero episodes of conflict over the past 30 days as indicated on the conflict frequency scale. Finally, participants completed a demographics questionnaire (see Appendix A).

To assess data quality, attention checks were utilized randomly throughout the study (Buhrmester et al., 2018). An example of an attention check item is “Please select *Strongly disagree* among the response options below.” Participants were notified that attention checks would be used via the study description. Further statistical analyses, described below, were used to detect non-compliant responses. Once Prolific workers submitted their survey responses, their work was reviewed and either accepted or rejected. Accepted work resulted in compensation, described above, and rejected work resulted in non-payment. Non-compliant responses and/or incomplete surveys were not accepted.

CHAPTER 4

RESULTS

4.1 Data Cleaning

A total of 110 of the 560 respondents were removed from the study for various reasons which will be described in detail below. The initial raw data sets on Prolific contained 295 supervisors and 244 non-supervisors ($N = 539$) and each submission was reviewed to determine whether work was acceptable for payment. First, data were screened using tactics for detecting and eliminating non-compliant responses, including instructing participants to "Click *Strongly disagree*" and "Click *Agree*" on two attention-check items placed randomly throughout the survey in Qualtrics and removing those who did not comply from further analysis (Meade & Craig, 2012). This resulted in the removal of two supervisors and one non-supervisor who failed one or both attention checks ($n = 3$). Another 21 non-supervisors were removed because they indicated that they had one or more direct reports during pre-screening ($n = 21$). Sixty-four supervisors were removed because they indicated that they did not have at least one direct report during pre-screening ($n = 64$). Seven supervisors were removed because they indicated that they were not currently employed in an organization during pre-screening ($n = 7$). Three supervisors were removed because they did not agree to the informed consent statement ($n = 3$). Finally, one supervisor was removed because they timed out of the survey and, thus, did not submit a completed survey ($n = 1$). The above screening resulted

in non-payment for 99 respondents, 77 supervisors and 22 non-supervisors, and a subsequent combined dataset of 218 supervisors and 222 non-supervisors ($N = 440$).

Once the 99 cases were removed for non-compliant responses, other methods for detecting insufficient effort responding (IER), based on guidance from Meade and Craig (2012), were conducted on the combined dataset of 440. These methods are described below and resulted in the data being removed from further analysis. All data analyses were conducted using the statistical software R. Data analysis often begins with methods for addressing missing cases (Beals & Nye, 2017). However, since there were no missing cases, this step was not necessary, and the proceeding step was to analyze the data for IER. The *careless* package (Yentes & Wilhelm, 2021) was used to detect IER via Mahalanobis distance, maximum LongString, and psychometric synonyms. The typical cutoff for rejection using outlier analysis via Mahalanobis distance is three standard deviations from the mean (Meade & Craig, 2012). The mean and standard deviation of the analysis were 52.88 and 24.12, respectively. This resulted in the removal of three supervisors and two non-supervisors whose Mahalanobis distances were greater than 125 ($n = 5$). The maximum number of the same response pattern that was accepted via maximum LongString was 12 which resulted in the removal of another three supervisors, and two non-supervisors, whose maximum LongString was greater than 12 ($n = 5$). Finally, psychometric synonyms were used to identify items with correlations greater than .60 which were used as reference items to assess within-person correlations (Meade & Craig, 2012). Matherly (2019) asserts that .03 should be used as the cutoff for rejection for within-person correlations on reference items. Thus, respondents with within-person correlations below .03 on the reference items were flagged resulting in the removal of

one non-supervisor (n = 1). As such, a total of six supervisors and five non-supervisors were removed for IER (n = 11).

After the 11 cases were removed for IER, the resulting dataset of 429 respondents contained 212 supervisors and 217 non-supervisors. Since the targeted number of respondents was 225 for each group, both studies were reopened on Prolific to collect data from 13 more supervisors and eight more non-supervisors (n = 21). Once those additional 21 respondents submitted their work, it was reviewed to determine if it was acceptable for payment. There were not any non-compliant responses, so no further cases were removed. Next, the above analyses used to detect IER were reconducted on the new sample of 450. There were no cases that (a) were flagged as outliers, (b) had too many of the same response pattern, or (c) had too low within-person correlations on reference items. As such, no further cases were removed and the sample of 225 supervisors and 225 non-supervisors (N = 450) was retained.

In summary, 110 of the 560 participants who submitted work via Prolific, or approximately 20% of the sample, were removed from the study. Barends and de Vries (2019) observed similar non-compliant response rates using other online survey platforms. Of the 110 removed participants, 77 supervisors and 22 non-supervisors were removed for non-compliant responses during pre-screening or failing attention-check statements (n = 99) and six supervisors and five non-supervisors were removed for IER (n = 11). The resulting total sample size for all subsequent analysis was 450.

4.2 Main Analysis

To determine if perceptions of the a) frequency and b) intensity of WIC differs between supervisors and non-supervisors in lateral and hierarchical dyads, participants'

scores on the WICS were compared. The *MANOVA.RM* package (Friedrich et al., 2018) was used to conduct a multivariate analysis of variance (MANOVA). Specifically, a two-factor (job level, supervisor or non-supervisor; and relationship type, lateral dyad or hierarchical dyad) MANOVA was used to compare group means of conflict frequency and conflict intensity perceptions across supervisors in lateral relationships, non-supervisors in lateral relationships, supervisors in hierarchical relationships, and non-supervisors in hierarchical relationships. Conflict frequency and intensity perceptions were measured by scores on the WICS, where higher scores indicated more frequent and more intense conflict perceptions, respectively.

4.2.1 Tests of Model Assumptions

Regarding MANOVA assumptions related to the study design, both dependent variables (DVs; conflict frequency and conflict intensity) were continuous, both factor variables (job level and relationship type) were categorical with two independent groups, and all observations were independent (Pituch & Stevens, 2016; Tabachnick & Fidell, 2014). Other assumptions related to how well the data fit the MANOVA model included adequate sample size, linearity between the DVs, no multicollinearity, no univariate or multivariate outliers, multivariate normality, homogeneity of variance-covariance matrices, and homogeneity of variances (Pituch & Stevens, 2016; Tabachnick & Fidell, 2014). Regarding sample size, there were between 112 and 113 participants in each cell of the research design. Researchers suggest that each cell should have at least as many cases as there are DVs, which in the present study is two (Pituch & Stevens, 2016; Tabachnick & Fidell, 2014). Moreover, as was discussed in a previous section, a statistical power analysis was carried out and the number of participants retained for

analysis ($N = 450$) exceeded the recommended sample size based on the results of the power analysis ($N = 424$). As such, the sample size was adequate considering the minimum sample size required to have a 90% chance of detecting a significant effect via a MANOVA design with two factors, two DVs, alpha = .05, power = .90, and effect size = .01 in addition to the expected number of non-compliant responses (Barends & de Vries, 2019; Young, 2006). Scatterplot matrices were produced to determine if there was a linear relationship between conflict frequency and conflict intensity scores for each group combination of job level and relationship type. Since each pattern of data points represented a straight line, the relationship between conflict frequency and conflict intensity appeared linear in all plots and it was concluded there was a linear relationship between the DVs (Pituch & Stevens, 2016; Tabachnick & Fidell, 2014). Next, Pearson's correlations were conducted to assess the correlations between the DVs for each group combination of job level and relationship type. Results revealed that the DVs were moderately correlated for all groups (supervisors in lateral relationships, $r = .76$, supervisors in hierarchical relationships, $r = .79$, non-supervisors in lateral relationships, $r = .80$, and non-supervisors in hierarchical relationships, $r = .85$). Since all correlation coefficients were below .90, they did not meet the threshold cited by Tabachnick and Fidell (2014) for concluding there was evidence of multicollinearity (Pituch & Stevens, 2016). Then, boxplots were used to determine if there were any univariate outliers for conflict frequency and conflict intensity scores for each group combination of job level and relationship type. An inspection of the boxplots did reveal values greater than 1.5 box lengths above the edge of the box for all cells in the research design as well as a few extreme points in all cells except for non-supervisors in hierarchical relationships.

Specifically, there were 21 univariate outliers and 16 extreme points. However, upon closer examination it was found that those 37 cases were not error outliers, due to measurement or encoding errors, and thus could have been potentially interesting outliers, due to possible unidentified moderators, or random outliers, due to random error (Leys et al., 2019). Further, Leys et al. (2019) suggests that, in certain situations, outliers can allow researchers to gain deeper insights into the phenomena being examined. The univariate outliers in the present study revealed perceptions of unusually high levels of conflict frequency and/or intensity which corresponded with the study's goal of determining if certain individuals perceive more frequent and intense WIC based on their job level and relationship type. Moreover, the data from those individuals could be used to provide additional context regarding the results or uncover possible moderators of the relationships by looking for any commonalities among the participants (Leys et al., 2019). As such, it was determined that the univariate outliers should be included in the analysis and not removed. After testing for univariate outliers, Mahalanobis distances were calculated to determine if there were any multivariate outliers. Values were compared with a cut-off value of 13.82 which represents the critical value of a chi-square (χ^2) distribution with the same number of degrees of freedom as there are DVs in the research design (i.e., 2) and an alpha level of .001 (Tabachnick & Fidell, 2014). Results revealed 4 cases with Mahalabobis distances greater than 13.82, all of which were previously flagged as univariate outliers. Again, it was determined that the multivariate outliers should be included in the analysis and not removed due to the same reasons cited above (Leys et al., 2019). Despite the decision to retain outliers for subsequent analysis, Weisburg (2014) suggests reporting results of analyses with and without outliers. I will

discuss both in the following section since the MANOVA results are reported with outliers and the output would have been slightly different if all of the outliers had been removed. Finally, Shapiro-Wilk's tests were conducted for each cell of the research design to assess multivariate normality. Results were significant ($p < .001$), revealing that the assumption of normality had been violated, for all groups (i.e., supervisors in lateral relationships, supervisors in hierarchical relationships, non-supervisors in lateral relationships, and non-supervisors in hierarchical relationships). However, there is a general consensus that MANOVA is robust to violating the assumption of normality (Bray & Maxwell, 1985; Pituch & Stevens, 2016; Tabachnick & Fidell, 2014; Weinfurt, 1995).

To further test model assumptions, Box's Test of Equality of Covariance Matrices and Levene's Test of Equality of Error Variances were conducted. The former tests the null hypothesis that the observed covariance matrices of the dependent variables are equal across groups (Pituch & Stevens, 2016; Tabachnick & Fidell, 2014). The latter tests the null hypothesis that the error variances of the dependent variables are equal across groups (Pituch & Stevens, 2016; Tabachnick & Fidell, 2014). Box's M test was greater than .001 and, therefore, not significant ($p = .042$) indicating there was homogeneity of covariance matrices. However, Levene's tests were significant ($p < .01$), indicating that the assumption of equality of error variances was violated. Although there are multiple tests of significance for MANOVA (i.e., Pillai's Trace, Wilks' Lambda, Hotelling's Trace, and Roy's Largest Root), Olson (1974) asserts that Pillai's Trace is more robust than the other statistics to violations of model assumptions. As such, only Pillai's Trace was considered from the MANOVA output when interpreting the results although the

other statistics revealed identical outcomes. Further, follow-up univariate analyses of variance (ANOVAs) were corrected for this violation via Bonferroni adjustments which will be discussed in greater detail below.

4.2.2 MANOVA Results

Results from the MANOVA revealed that there was a statistically significant multivariate interaction effect between job level and relationship type on the combined dependent variables, conflict frequency and conflict intensity, $F(2, 445) = 5.363$, $p = .005$, Pillai's Trace = .024, partial $\eta^2 = .024$ (see Table 1).

Table 1

MANOVA Results

Effect	*Pillai's Trace*	*F*	*Hypothesis df*	*Error df*	*p*	*Partial η²*
Job Level	.009	1.960	2	445	.142	.009
Relationship Type	.014	3.219	2	445	.041*	.014
Job Level * Relationship Type	.024	5.363	2	445	.005**	.024

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

4.2.3 Univariate Tests

Since there was a significant multivariate interaction effect, two univariate analyses of variance (ANOVAs) were conducted as *post hoc* tests to interpret the interaction effects for each DV separately (Al-Abdullatif et al., 2019; Pituch & Stevens, 2016; Tabachnick & Fidell, 2014). Further, as recommended by some researchers (Bray

& Maxwell, 1985; Pituch & Stevens, 2016; Tabachnick & Fidell, 2014; Weinfurt, 1995), a Bonferroni adjustment was applied to the level of statistical significance by dividing the current alpha level of .05 by the number of DVs being tested (i.e., 2) resulting in a new significance level of .025 for all univariate analyses. After applying this adjustment, results revealed a significant interaction effect between job level and relationship type for conflict frequency, $F(1, 446) = 10.113$, $p = .002$, partial $\eta^2 = .022$, but not for conflict intensity, $F(1, 446) = 4.252$, $p = .040$, partial $\eta^2 = .009$ (see Table 2).

Table 2

Univariate Tests of Between-Subjects Effects

Effect	Dependent Variable	*SS*	*df*	*MS*	*F*	*p*	*Partial η²*
Job Level	Frequency	50.697	1	50.697	3.062	.081	.007
	Intensity	24.523	1	24.523	.704	.402	.002
Relationship Type	Frequency	103.035	1	103.035	6.222	.013*	.014
	Intensity	101.323	1	101.323	2.908	.089	.006
Job Level * Relationship Type	Frequency	167.456	1	167.456	10.113	.002*	.022
	Intensity	148.178	1	148.178	4.252	.040	.009

*$p < .025$

Due to the significant univariate interaction effect for conflict frequency, simple main effects analysis of job level and relationship type on conflict frequency were interpreted one at a time using a Bonferroni adjustment. Researchers differ in opinions regarding whether main effects should be reported when a significant interaction effect is found (Howell, 2010). For example, Maxwell and Delaney (2004) state that, as a general

rule, main effects should not be reported when there is a significant interaction term while Fox (2016) argues that one should consider reporting main effects. Further, Searle (2006) suggests that the decision to report or not to report main effects is essentially a judgment call since interpreting main effects can be misleading. Finally, Laerd Statistics (2017) asserts that because reporting main effects are misleading when you have a significant interaction effect, researchers should conduct simple main effects analysis since the results will be different from the main effects. Therefore, based on the previous assertion, the simple main effects of job level and relationship type on conflict frequency were examined. Simple main effects analysis showed that relationship type had a statistically significant effect on conflict frequency, $F(1, 446) = 6.222$, $p = .013$, partial $\eta^2 = .014$. Specifically, participants (i.e., supervisors and non-supervisors) in hierarchical relationships ($M = 9.23$, $SD = 4.26$), regardless of whether they were higher or lower in the hierarchy, perceived significantly higher conflict frequency than participants in lateral relationships ($M = 8.27$, $SD = 3.97$; see Figure 2), with a mean difference of 0.96, 95% CI [0.20, 1.71]. However, simple main effects analysis showed that job level did not have a statistically significant effect on conflict frequency, $F(1, 446) = 3.062$, $p = .081$, partial $\eta^2 = .007$ (see Table 3). As such, the average conflict-frequency scores for supervisors ($M = 8.41$, $SD = 3.86$) and non-supervisors ($M = 9.08$, $SD = 4.39$) were not statistically different. In summary, there was a significant main effect for relationship type on conflict frequency but no significant main effect for job level on conflict frequency.

Figure 2

Average Conflict Frequency by Relationship Type

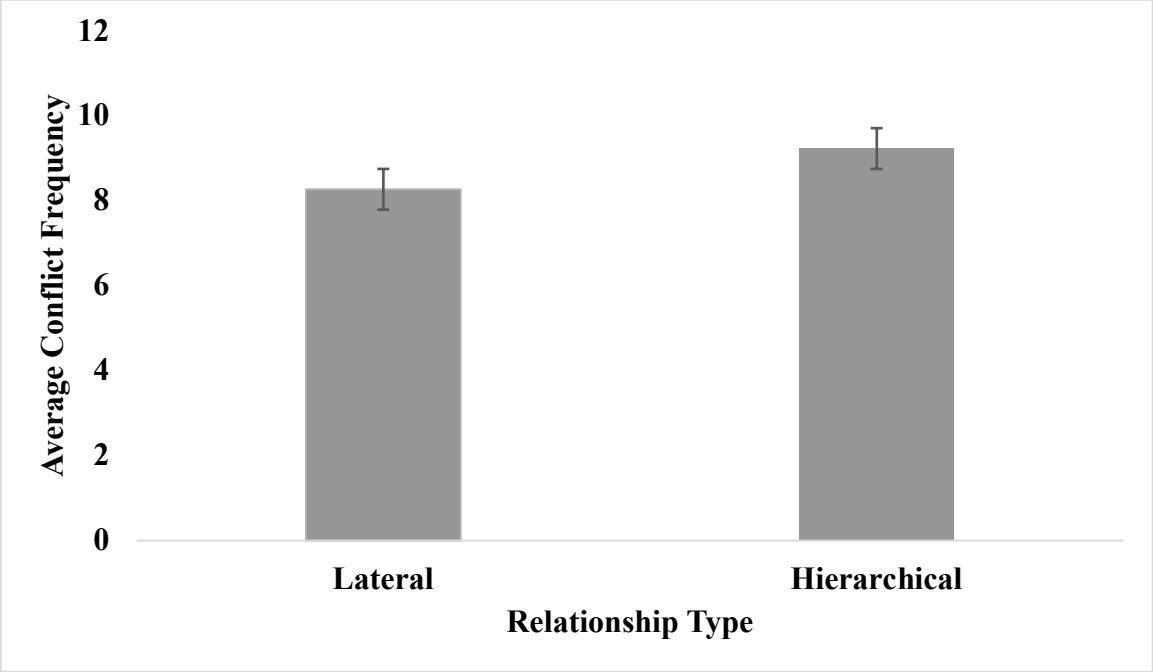


Table 3

Simple Main Effects for Conflict Frequency

Effect	Dependent Variable		*SS*	*df*	*MS*	*F*	*p*	*Partial* η^2
Job Level	Frequency	Contrast	50.697	1	50.697	3.062	.081	.007
		Error	7385.287	446	16.559			
Relation-ship Type	Frequency	Contrast	103.035	1	103.035	6.222	.013*	.014
		Error	15541.974	446	16.559			

*$p < .025$

Given the non-significant univariate interaction effect between job level and relationship type for conflict intensity, the univariate main effects were examined. There was no significant main effect of job level on conflict intensity, $F(1, 446) = 0.704$, $p = .402$, partial $\eta^2 = .002$. The average conflict intensity scores for supervisors ($M = 6.65$, $SD = 5.77$) and non-supervisors ($M = 7.12$, $SD = 6.10$) were not statistically different. There was also no significant main effect of relationship type on conflict intensity, $F(1, 446) = 2.908$, $p = .089$, partial $\eta^2 = .006$. The average conflict intensity scores for participants in lateral relationships ($M = 6.41$, $SD = 5.90$) and those in hierarchical relationships ($M = 7.36$, $SD = 5.94$) were not statistically different. In summary, there was no significant main effect for job level or relationship type on conflict intensity.

4.2.4 Support for Hypothesis

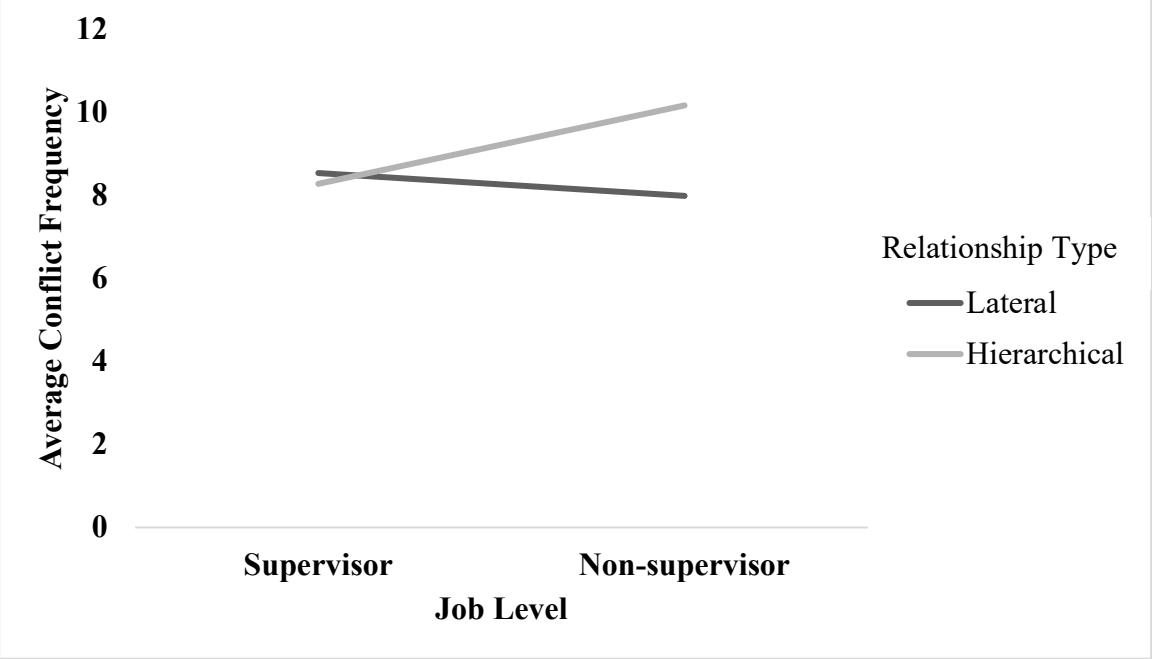
The hypothesis in the present study predicted that there would be a significant multivariate interaction effect between job level and relationship type on the combined DVs, conflict frequency and conflict intensity. Further, it was expected that *post hoc* tests would reveal significant univariate interaction effects between job level and relationship type on conflict frequency and conflict intensity, respectively. Finally, it was expected that pairwise comparisons between each combination of job level and relationship type would reveal that supervisors in hierarchical relationships perceived significantly higher a) frequency and b) intensity of WIC than supervisors in lateral relationships, non-supervisors in lateral relationships, and non-supervisors in hierarchical relationships.

As predicted in *H1*, there was a significant multivariate interaction effect between job level and relationship type on the combined DVs. Further, there was a significant univariate interaction effect between job level and relationship type on conflict

frequency. However, there was no significant interaction effect between job level and relationship type on conflict intensity. Moreover, despite the significant interaction effect for conflict frequency, the hypothesized direction of the interaction was not supported which will be described below. It was expected that supervisors in hierarchical relationships would perceive the highest conflict frequency and intensity. Instead, univariate tests confirmed that the main effect of job level on conflict frequency was not statistically significant. As such, the results did not reveal significantly different conflict-frequency scores for non-supervisors in hierarchical relationships, $M = 10.17$, $SD = 4.58$, non-supervisors in lateral relationships, $M = 7.99$, $SD = 3.92$, supervisors in lateral relationships, $M = 8.54$, $SD = 4.03$, and supervisors in hierarchical relationships, $M = 8.28$, $SD = 3.69$ (see Figure 3).

Figure 3

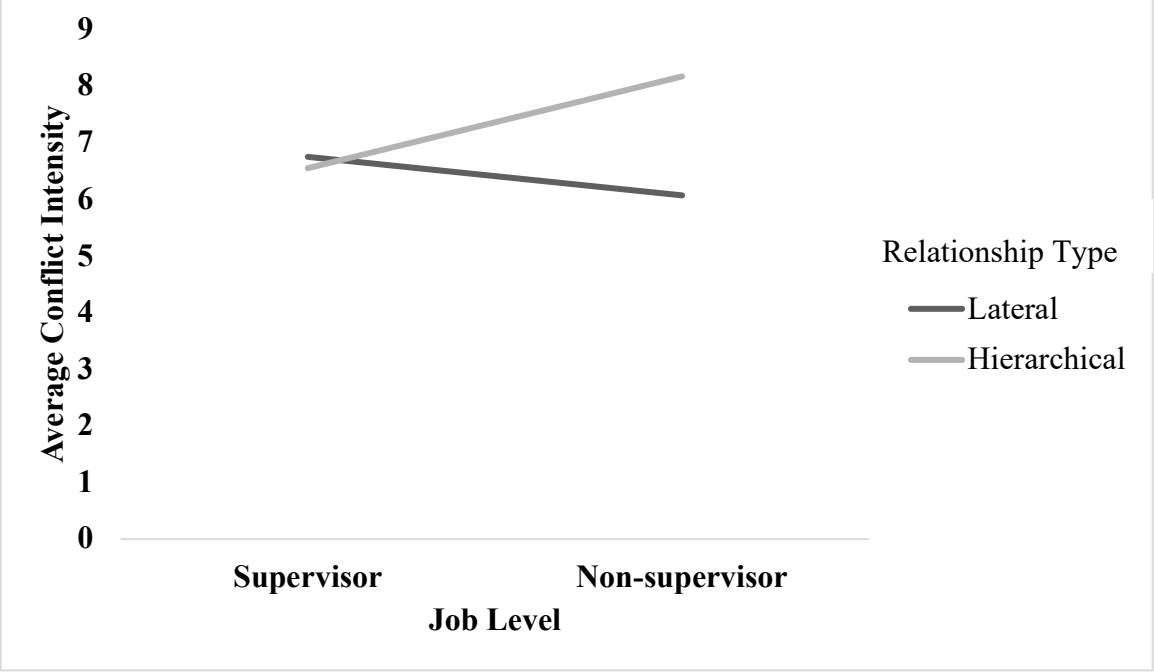
Average Conflict Frequency by Job Level and Relationship Type



Further, univariate tests confirmed that there was no significant interaction effect, or significant main effects, of job level and relationship type on conflict intensity. As such, the results did not reveal significantly different conflict-intensity scores for non-supervisors in hierarchical relationships, $M = 8.17$, $SD = 6.56$, non-supervisors in lateral relationships, $M = 6.07$, $SD = 5.43$, supervisors in lateral relationships, $M = 6.75$, $SD = 6.34$, and supervisors in hierarchical relationships, $M = 6.55$, $SD = 5.16$ (see Figure 4). Thus, *H1* did not receive full support.

Figure 4

Average Conflict Intensity by Job Level and Relationship Type



4.2.5 Results with Outliers Removed

Retaining the 37 univariate outliers for subsequent analysis after identifying them when testing MANOVA model assumptions resulted in a non-significant interaction effect, and non-significant main effects, of job level and relationship type for conflict intensity and only a significant simple main effect of relationship type for conflict frequency. However, if the outliers had been removed prior to conducting the MANOVA the results for the retained sample of 413 participants would have been different. Thus, following suggestions from Weisburg (2014), results of the above analyses without outliers are reported below. Specifically, there would have been a significant multivariate interaction effect between job level and relationship type on the combined DVs, conflict frequency and conflict intensity, $F(2, 408) = 21.258$, $p < .001$, Pillai's Trace = .094, partial $\eta^2 = .094$. Further, univariate *post hoc* tests would have revealed significant interaction effects between job level and relationship type for both conflict frequency, $F(1, 409) = 38.3448$, $p < .001$, partial $\eta^2 = .086$, and conflict intensity, $F(1, 409) = 8.265$, $p = .004$, partial $\eta^2 = .020$, respectively. There also would have been significant simple main effects of both job level, $F(1, 409) = 5.159$, $p = .024$, partial $\eta^2 = .012$, and relationship type, $F(1, 409) = 25.399$, $p < .001$, partial $\eta^2 = .058$, on conflict frequency and a significant simple main effect of relationship type on conflict intensity, $F(1, 409) = 12.638$, $p < .001$, partial $\eta^2 = .030$. Despite there being more statistically significant results with outliers removed, the overall support for *H1* would not have changed given that there were no significant differences in conflict-intensity scores between groups. Further, the significant *post hoc* interaction effect, and main effects, of job level and relationship type on conflict frequency would have revealed that non-supervisors in

hierarchical relationships (M = 9.36, SD = 3.39) had significantly higher conflict-frequency scores than non-supervisors in lateral relationships, M = 6.83, SD = 1.27, supervisors in lateral relationships, M = 7.71, SD = 2.03, and supervisors in hierarchical relationships, M = 7.45, SD = 1.89.

CHAPTER 5

DISCUSSION

5.1 Principal Findings

WIC is a potential major source of stress for several occupations that can have adverse outcomes for organizations. Although WIC has received considerable attention, there is little research assessing perceptions of WIC from a dyadic perspective in lateral (coworker-coworker) and hierarchical (supervisor-subordinate) relationships between supervisors and non-supervisors. This is important because previous research indicates that individuals perceive and experience conflict differently in dyads as compared to groups (Park et al., 2020). Due to the above, I aimed to investigate whether perceptions of the frequency and intensity of WIC differed among supervisors and non-supervisors in lateral and hierarchical relationships. Specifically, I posited that supervisors in hierarchical relationships with subordinates should have more frequent and intense perceptions of WIC than any other group (i.e., supervisors in lateral relationships, non-supervisors in lateral relationships, and non-supervisors in hierarchical relationships). This hypothesis was based on five studies by Anicich and his colleagues (2016) supporting that individuals whose roles imparted power (i.e., having the power to hire and fire employees) had significantly different perceptions of interpersonal conflict compared to individuals whose roles did not impart power. That is, individuals who occupied a role that afforded power reported higher levels of interpersonal conflict than

other organizational members (Anicich et al., 2016). Since supervisors in organizations have more role-based power compared to non-supervisors (Graham et al., 2017), I expected supervisors to be more likely to experience interpersonal conflict than non-supervisors and thus perceive higher frequency and intensity of WIC. Further, based on Dyadic Power Theory (Dunbar, 2004), I expected supervisors to perceive more frequent and intense WIC in hierarchical, compared to lateral, relationships since unequal power dyads may perceive more frequent and intense conflict compared to equal power dyads.

Results from the MANOVA did reveal a significant multivariate interaction effect between job level and relationship type on conflict frequency and intensity, as predicted by *H1*. Unfortunately, however, there was no support for the hypothesis given that supervisors in hierarchical dyads did not have significantly higher average conflict frequency and intensity scores as expected based on the results of Anicich et al. (2016). Rather, *post hoc* tests only confirmed a significant main effect of relationship type on conflict frequency. Specifically, participants in hierarchical relationships (i.e., unequal-power dyads; supervisor-non-supervisor and non-supervisor-supervisor) perceived significantly more frequent WIC than participants in lateral relationships (i.e., equal-power dyads; non-supervisor-non-supervisor and supervisor-supervisor), supporting Dyadic Power Theory (Dunbar, 2004). There was no significant main effect of job level (supervisor vs. non-supervisor) on conflict frequency and no significant interaction or main effects for conflict intensity.

There are several potential explanations for the lack of support for *H1* that will be described in detail below. First, although there is little research assessing perceptions of conflict from a dyadic perspective in lateral (coworker-coworker) and hierarchical

(supervisor-subordinate) relationships between supervisors and non-supervisors, the studies that do currently exist in the literature have mixed findings. For example, different from the findings of Anicich et al. (2016), which were used to formulate the hypothesis in the present study, a 2015 survey report of 2,195 UK employees by the Chartered Institute for Personnel and Development (CIPD, 2015) found that individuals are most likely to perceive conflict with their superiors. This supports the results of the present study, with outliers removed, that non-supervisors had the highest perceived conflict frequency with their direct supervisor, although a similar survey report has not been conducted using a U.S. employee sample, to the author's knowledge. Further, results from Kessler et al. (2013) and Liu et al. (2015), which were cited previously when discussing research assessing conflict from a dyadic perspective, did not reveal significant differences between conflict with supervisors and conflict with coworkers. This suggests that further research is needed assessing WIC from a dyadic perspective to determine which results are replicable to form a consensus regarding the relationships between job level and relationship type on perceptions of conflict frequency and intensity.

Next, it is possible the participants in this study had different conflict-management styles which may have influenced their perceptions of the frequency and intensity of WIC. In an early study assessing relationships between conflict-management styles and levels of interpersonal conflict experienced by employees in different organizational relationships (immediate supervisor, peers, and subordinates), Weider-Hatfield and Hatfield (1995) found that certain conflict-management styles were associated with significantly higher perceptions of conflict with one's immediate

supervisor. It is possible that participants randomly assigned to the hierarchical relationship type in the present study had conflict-management styles that Weider-Hatfield and Hatfield (1995) purported were associated with significantly higher perceptions of conflict, which could explain the findings that participants in hierarchical relationships had significantly higher conflict-frequency scores than participants in lateral relationships.

Finally, another possible explanation is that the ethno-racial composition of the dyads that were examined could have influenced the results. Miller et al. (2019) revealed that minority leaders perceived more relationship conflict with ethno-racially similar subordinates than non-minority dyads in a study of supervisor-subordinate dyads from multiple companies. Most of the participants in the present study were White or Caucasian (74.2%) with minorities only accounting for 25.8% of the sample. It is possible that the lack of more minority supervisors in the sample accounted for the findings in the present study that supervisors did not have the highest conflict frequency and intensity scores. Further, demographic information was not collected regarding the referent when participants were answering items on the WICS. As such, the ethno-racial composition of the dyads that were examined cannot be determined.

5.2 Limitations and Future Directions

This research was not without limitations. First, the procedure used in the present study to measure WIC may have influenced the findings. Participants who were randomly assigned a relationship type other than their direct supervisor were instructed to identify a referent who either worked under the same supervisor and performed similar job duties to them or a subordinate who worked directly under them. It is possible that

participants were predisposed to select an individual with whom they get along with since they were not explicitly instructed to identify someone with whom they had experienced conflict. For example, Fiedler's (1972) Least Preferred Coworker (LPC) scale instructs participants to think of the one person (a peer, boss, or subordinate) with whom they could work least well. That is, the person with whom they had the most difficulty getting a job done and would least want to work with. A future study could explicitly tell participants to identify a referent such as their least preferred coworker, or include the LPC scale, to see if it influences perceptions of the frequency and intensity of WIC. Further, although a similar method was used in a previous study where employees were asked to identify a coworker who worked for the same supervisor (see Kessler et al., 2013), it is possible that other objective data-collection methods may have resulted in different outcomes. For example, Liu et al. (2015) instructed participants to complete one part of a survey packet containing an employee survey and a coworker survey and give the latter to someone with whom they worked. Other dyadic studies have surveyed both the participant and a referent who was either their direct supervisor, a subordinate who worked directly under them, or someone who worked under the same supervisor as them (Humphrey et al., 2017; Kessler et al., 2013). Future research could employ one or several of these methods to determine if they affect results.

Next, the research design may have impacted the results. The present study used a cross-sectional research design with self-reported perceptions of the frequency and intensity of WIC rather than objectively measuring the occurrence of WIC in organizations which prevents causal conclusions. Also, despite the presence of a significant interaction term, *post hoc* univariate tests revealed a significant main effect of

relationship type, and a non-significant main effect of job level, on conflict-frequency scores which influenced how the results were interpreted. Further, participants were instructed to recall their last 30 days at work when answering items on the WICS. As such, it is possible that they may have failed to accurately recall the frequency and/or intensity of conflict that occurred over the past 30 days, which could have altered or distorted their perceptions of WIC. Although these were the original instructions for the instrument, it is possible that a longer or shorter time frame could have produced different findings. Future research could objectively measure conflict in organizations via direct observations and compare objective conflict data with employees' perceptions of the frequency and intensity of WIC to determine if their perceptions accurately reflect actual episodes of conflict. Future research could also randomly assign different time frames, such as over the past week or past year, when placing employees in a particular frame of reference when answering items on the WICS to determine if perceptions of WIC differ based on the time frame used. Further, a few model assumptions were violated including normality and equality of error variances. Several univariate and multivariate outliers were also detected and retained for analysis, which could have influenced the outcomes. Although only Pillai's Trace was reported from the MANOVA output to reduce the effects of violations of model assumptions, future research could consider using data transformations or removing outliers from subsequent analysis to ensure they do not disproportionately affect results.

Finally, how the construct of WIC was conceptualized and measured may have altered the results. The present study used the WICS to measure perceptions of conflict. As mentioned previously, the WICS includes both task and relationship conflict, as well

as elements not previously considered in prior measures, allowing for a more comprehensive assessment of WIC (Wright et al., 2017). However, task and relationship conflict are predominantly treated separately in the literature and previous studies have used multiple measures to parse task conflict from relationship conflict rather than use one general measure of conflict (Humphrey et al., 2017; Park et al., 2020). Further, researchers have found different antecedents and outcomes of task vs. relationship conflict and discovered situations in which certain levels of task conflict can have positive effects on team and organizational performance (Jehn, 1995; Jehn, 1997; Jehn & Chatman, 2000; Jehn et al., 2010). As such, future research should consider using a different measure of WIC or including measures that isolate task and relationship conflict to determine if they result in different conflict perceptions based on job level and/or relationship type.

Regarding future directions not previously mentioned, as discussed above, future research could measure participants' conflict-management styles in addition to their perceptions of conflict to determine if certain styles are associated with more frequent and/or intense perceptions of conflict. Also, if a similar research design were used, future research could collect demographic information about the referents that participants identify, or about one's direct supervisor, in addition to the participant's own demographic information. Specifically, racial/ethnic information about the individual that participants answer the WICS about should be collected to determine if ethno-racial similarity influences results, particularly for minorities.

5.3 Conclusion

Most studies on conflict in organizations have been conducted at the group, rather than the dyadic, level (Anicich et al., 2016; Lu et al., 2011). However, research indicates that individuals perceive and experience conflict differently in dyads and groups (Park et al., 2020). Thus, it is possible that conflict may be perceived more frequently or intensely between two individuals, compared to a group or organizational team. The goal of the present study was to compare perceptions of dyadic lateral and hierarchical WIC among supervisors and non-supervisors in various industries using the WICS to determine if there are differences in perceptions of conflict based on job level and relationship type. Specifically, I hypothesized that supervisors in hierarchical relationships would perceive the highest levels of WIC frequency and intensity based on previous research in the social-hierarchy literature stating that employees occupying a role that affords power (i.e., supervisors) report higher levels of interpersonal conflict than employees without role-based power (i.e., non-supervisors; Anicich et al., 2016) and employees in unequal power dyads (i.e., hierarchical relationships) may perceive more frequent and intense conflict compared to equal power dyads (i.e., lateral relationships; Dunbar, 2004). Results revealed that participants in hierarchical relationships (supervisor-non-supervisor and non-supervisor-supervisor) perceived more frequent conflict than participants in lateral relationships (non-supervisor-non-supervisor and supervisor-supervisor). Given the mixed findings in research assessing perceptions of conflict from a dyadic perspective, further research is needed exploring the relationships between job level and relationship type on perceptions of the frequency and intensity of WIC.

APPENDIX A

DEMOGRAPHICS QUESTIONNAIRE

1. Please indicate your gender. (Check one) ___ Male ___ Female ___ Nonbinary
2. Please indicate your age (in years). _____
3. Please indicate your race/ethnicity. (Check one)

___ White or Caucasian ___ Black or African American ___ Hispanic or Latino

___ Asian ___ American Indian or Alaska Native ___ Two or more races

4. What is your occupational status? (Check one)

___ Employed part-time ___ Employed full-time ___ Unemployed

___ Student ___ Other: (please specify) _____

5. Please indicate your job level. (Check one) ___ Supervisor ___ Non-supervisor
6. How much tenure (in years) do you have in your organization? (Check one)

___ Less than one year ___ 1-5 years ___ 6-10 years

___ 11-15 years ___ 16-20 years ___ +20 years

7. How many hours do you work per week? _____

APPENDIX B

WORKPLACE INTERPERSONAL CONFLICT SCALE

Please circle one response next to each question. In the past 30 days, how many times have you:	Never 0x	Almost never 1-2x	Sometimes 3-4x	Often 5-6x	Very often +6x
1. Felt like you were treated unfairly by others at work?	1	2	3	4	5
2. Had a disagreement with others over the work you do?	1	2	3	4	5
3. Been shown a lack of respect or felt underappreciated by others at work?	1	2	3	4	5
4. Been treated with hostility or rude behavior by others at work?	1	2	3	4	5
5. Had others yell at you at work?	1	2	3	4	5
6. Been blamed or criticized for something that was not your fault by others at work?	1	2	3	4	5
Please circle one response next to each question. For each of the above questions, please indicate the intensity of conflict you experienced with others.	Not intense	Somewhat not intense	Somewhat intense	Moderately intense	Very intense
1. Felt like you were treated unfairly by others at work?	1	2	3	4	5
2. Had a disagreement with others over the work you do?	1	2	3	4	5
3. Been shown a lack of respect or felt underappreciated by others at work?	1	2	3	4	5
4. Been treated with hostility or rude behavior by others at work?	1	2	3	4	5
5. Had others yell at you at work?	1	2	3	4	5
6. Been blamed or criticized for something that was not your fault by others at work?	1	2	3	4	5

APPENDIX C

WORKING LIST DESCRIPTION

In the survey, you will be asked to recall past interactions you have had with fellow employees in your organizations followed by a measure asking how you felt during those interactions. The survey will also request demographic information.

If you accept this work assignment, but do not agree to the consent form in the survey, you will NOT be compensated.

Further, if you do not pay attention to the item contents and survey instructions, your responses will be flagged as non-compliant by statistical analyses and you will NOT be compensated.

Finally, if you do not submit your completed survey you will NOT be compensated.

The informed consent form below provides further details about this research study. Please read it entirely and only accept this work assignment if you agree to the form below.

HUMAN SUBJECTS CONSENT FORM

The following is a brief summary of the project in which you are asked to participate. Please read this information before signing the statement below. You must be of legal age or must be co-signed by parent or guardian to participate in this study.

TITLE OF PROJECT: Perceptions of Recalled Interactions Between Employees

PURPOSE OF STUDY/PROJECT: To rate interactions between coworkers and/or supervisors.

SUBJECTS: 450 working adults in the U.S. recruited online via Prolific.

PROCEDURE: If you agree to participate in this study, then you will fill out an online survey via Qualtrics containing the consent form. Next, you will complete questions asking you to rate interactions between yourself and fellow employees at your organization. Finally, you will complete a demographics questionnaire. The study will take approximately 20 minutes to complete. A summary of the results will be available upon request once this study is completed. Your responses will be de-identified to ensure confidentiality.

BENEFITS/COMPENSATION: Token payment will be provided to individuals participating via Prolific at a rate of $2.67 per participant ($8 an hour for 20 minutes of time).

RISKS, DISCOMFORTS, ALTERNATIVE TREATMENTS: This study involves no treatment or physical contact. Some individuals may experience discomfort when recalling past negative interactions with fellow employees in their organization. The participant understands that LA Tech is not able to offer financial compensation nor to absorb the costs of medical treatment should you be injured as a result of participating in this research. Data will be kept confidential by assigning participant ID numbers to de-identify their responses. Deidentified information will be reported in aggregate.

The following disclosure applies to all participants using online survey tools: This server may collect information and your IP address indirectly and automatically via "cookies".

CONTACT INFORMATION: The principal experimenters listed below may be reached to answer questions about the research, subjects' rights, or related matters.

PRINCIPAL INVESTIGATOR: Dr. Mitzi Apter-Desselles – mdessell@latech.edu
CO-INVESTIGATOR: Matthew Castillo, M.S. – msc044@latech.edu

Members of the Human Use Committee of Louisiana Tech University may also be contacted if a problem cannot be discussed with the experimenters:

Dr. Richard Kordal, Director, Office of Intellectual Property & Commercialization
Ph: (318) 257-2484, Email: rkordal@latech.edu

REFERENCES

Al-Abdullatif, F., Al-Abdullatif, M. A., & Brooks, G. (2019). MANOVA post hoc techniques used in published articles: A systematic review. *General Linear Model Journal, 45*, 1-8. Retrieved from http://www.glmj.org/archives/articles/AlAbdullatif_v45n1.pdf.

Anicich, E. M., Fast, N. J., Halevy, N., & Galinsky, A. D. (2016). When the bases of social hierarchy collide: Power without status drives interpersonal conflict. *Organization Science, 27*, 123-140. doi:10.1287/orsc.2015.1019

Bandura, A. (1999). Social cognitive theory of personality. In D. Cervone & Y. Shoda (Eds.), *The coherence of personality: Social-cognitive bases of consistency, variability, and organization* (pp. 185–241). Guilford Press.

Barends, A. J., & de Vries, R. E. (2019). Noncompliant responding: Comparing exclusion criteria in MTurk personality research to improve data quality. *Personality and Individual Differences, 143*, 84-89. doi:10.1016/j.paid.2019.02.015

Barki, H., & Hartwick, J. (2004). Conceptualizing the construct of interpersonal conflict. *The International Journal of Conflict Management, 15*, 216–244. doi:10.1108/eb022913

Barling, J., Dupre, K. E., & Kelloway, E. K. (2009). Predicting workplace aggression and violence. *Annual Review of Psychology, 60*, 671– 692. doi:10.1146/annurev.psych.60.110707.163629

Beals, E., & Nye, C. (2017). Missing data. In S. Rogelberg (Ed.), *The SAGE encyclopedia of industrial and organizational psychology, 2nd edition* (pp. 956-958). Thousand Oaks, CA: SAGE Publications.

Beatty, M. J., Valencic, K. M., Rudd, J. E., & Dobos, J. A. (1999). A “dark side” of communication avoidance: Indirect interpersonal aggressiveness. *Communication Research Reports, 16*, 103–109. doi:10.1080/08824099909388707

Bergmann, T. J., & Volkema, R. J. (1994). Issues, behavioral responses, and consequences in interpersonal conflicts. *Journal of Organizational Behavior, 15*, 467-471. doi:10.1002/job.4030150510

Bolger, N., DeLongis, A., Kessler, R. C., & Schilling, E. A. (1989). Effects of daily stress on negative mood. *Journal of Personality and Social Psychology, 57*, 808–818. doi:10.1037/0022–3514.57.5.808

Bray, J. H., & Maxwell, S. E. (1985). *Multivariate analysis of varianc*e. Thousand Oaks, CA: Sage.

Brett, J. M., Shapiro, D. L., & Lytle, A. L. (1998). Breaking the bonds of reciprocity in negotiations. *Academy of Management Journal, 41*, 410-424. doi:10.5465/257081

Bruk-Lee, V., & Spector, P. E. (2006). The social stressors-counterproductive work behaviors link: Are conflicts with supervisors and coworkers the same? *Journal of Occupational Health Psychology, 11*, 145–156. doi:10.1037/1076-8998.11.2.145

Buhrmester, M., Kwang, T., & Gosling, S. D. (2016). Amazon's Mechanical Turk a new source of inexpensive, yet high-quality, data? *Perspectives on Psychological Science, 6*, 3–5. doi:10.1177/174569161039

Buhrmester, M. D., Talaifar, S., & Gosling, S. D. (2018). An evaluation of Amazon's Mechanical Turk, its rapid rise, and its effective use. *Perspectives on Psychological Science, 13*, 149-154. doi:10.1177/1745691617706516

Cannon-Bowers, J. A., Salas, E., & Converse S. (1993). Shared mental models in expert team decision making. In N. J. Castellan Jr. (Ed.), *Individual and group decision making: Current issues* (pp. 221-246). Hillsdale, NJ: Erlbaum.

Carley, K. M., & Krackhardt, D. (1996). Cognitive inconsistencies and non-symmetric friendship. *Social Networks, 18*, 1-27. doi:10.1016/0378-8733(95)00252-9

Casciaro, T., Carley, K. M., & Krackhardt, D. (1999). Positive affectivity and accuracy in social network perception. *Motivation and Emotion, 23*, 285-306. doi:10.1023/A:1021390826308

Chartered Institute for Personnel and Development. (2015). Getting under the skin of workplace conflict: Tracing the experiences of employees. Retrieved from https://www.cipd.co.uk/Images/getting-under-skin-workplace-conflict_2015-tracing-experiences-employees_tcm18-10800.pdf.

Chung, W. (2017). *Antecedents of perceived dyadic conflict: A multilevel perspective* (Order No. 10902683). [Doctoral dissertation, University of Illinois at Urbana-Champaign]. ProQuest Dissertations Publishing.

Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences* (3rd ed.). Mahwah, NJ: Lawrence Erlbaum Associates Inc., Publishers.

CPP, Inc. (2008). *Workplace conflict and how businesses can harness it to thrive*. Global Human Capital Report. Mountain View, CA.

Dunbar, N. E. (2004) Theory in progress: Dyadic power theory: Constructing a communication-based theory of relational power. *Journal of Family Communication, 4*, 235-248, doi:10.1080/15267431.2004.9670133

Fast, N. J., Halevy, N., & Galinsky, A. D. (2012). The destructive nature of power without status. *Journal of Experimental Social Psychology, 48*, 391-394. doi:10.1016/j.jesp.2011.07.013

Fiedler, F. E. (1972). Personality, motivational systems, and behavior of high and low LPC persons. *Human Relations, 25*, 391-412. doi:10.1177/001872677202500502

Fox, J. (2016). *Applied regression analysis and generalized linear models* (3rd ed.). Thousand Oaks, CA: Sage Publications.

Friedrich, S., Konietschke, F., & Pauly, M. (2018). *MANOVA.RM: Resampling-based analysis of multivariate data and repeated measures designs*. R package version 0.4.3. Retrieved from https://CRAN.R-project.org/package=MANOVA.RM.

Frone, M. R. (2000). Interpersonal conflict at work and psychological outcomes: Testing a model among young workers. *Journal of Occupational Health Psychology, 5*, 246–255. doi:10.1037/1076-8998.5.2.246

Graham, K. A., Dust, S. B., & Ziegert, J. C. (2017). Supervisor-employee power distance incompatibility, gender similarity, and relationship conflict: A test of interpersonal interaction theory. *Journal of Applied Psychology, 103*, 334–346. doi:10.1037/apl0000265

Graziano, W. G., Jensen-Campbell, L. A., & Hair, E. C. (1996). Perceiving interpersonal conflict and reacting to it: The case for agreeableness. *Journal of Personality and Social Psychology, 70*, 820–835. doi:10.1037//0022-3514.70.4.820

Gupta, M., Boyd, L., & Kuzmits, F. (2011). The evaporating cloud: A tool for resolving workplace conflict. *International Journal of Conflict Management, 22*, 394–412. doi:10.1108/10444061111171387

Hershcovis, S. (2011). 'Incivility, social undermining, bullying…oh my!': A call to reconcile constructs within workplace aggression research. J*ournal of Organizational Behavior, 32*, 499–519. doi:10.1002/job.689

Hershcovis, M. S., Turner, N., Barling, J., Arnold, K. A., Dupré, K. E., Inness, M., & Sivanathan, N. (2007). Predicting workplace aggression: A meta-analysis. *Journal of Applied Psychology, 92*, 228–238. doi:10.1037/0021-9010.92.1.228

Hirsh, J. B., Galinsky, A. D., & Zhong, C. B. (2011). Drunk, powerful, and in the dark: How general processes of disinhibition produce both prosocial and antisocial behavior. *Perspectives on Psychological Science, 6*, 415-427. doi:10.1177/1745691611416992

Hong, M., Steedle, J. T., & Cheng, Y. (2020). Methods of detecting insufficient effort responding: Comparisons and practical recommendations. *Educational and Psychological Measurement, 80*, 312-345. doi:10.1177/0013164419865316

Howell, D. C. (2010). *Statistical methods for psychology* (7th ed.). Belmont, CA: Wadsworth, Cengage Learning.

Humphrey, S. E., Aime, F., Cushenbery, L., Hill, A. D., & Fairchild, J. (2017). Team conflict dynamics: Implications of a dyadic view of conflict for team performance. *Organizational Behavior and Human Decision Processes, 142*, 58-70. doi:10.1026/j.obhdp.2017.08.002

Ilies, R., Johnson, M. D., Judge, T. A., & Keeney, J. (2011). A within-individual study of interpersonal conflict as a work stressor: Dispositional and situational moderators. *Journal of Organizational Behavior, 32*, 44-64. doi:10.1002/job.677

Inoue, A., & Kawakami, N. (2010). Interpersonal conflict and depression among Japanese workers with high or low socioeconomic status: Findings from the Japan Work Stress and Health Cohort Study. *Social Science and Medicine, 71*, 173–180. doi:10.1016/j.socscimed.2010.02.047

Jaramillo, F., Mulki, J. P., & Boles, J. S. (2011). Workplace stressors, job attitude, and job behaviors: Is interpersonal conflict the missing link? *Journal of Personal Selling & Sales Management, 31*, 339–356. doi:10.2753/PSS0885-3134310310

Jehn, K. A. (1995). A multimethod examination of the benefits and detriments of intragroup conflict. *Administrative Science Quarterly, 40*, 256–282. doi:10.2307/2393638

Jehn, K. A. (1997). A qualitative analysis of conflict types and dimensions in organizational groups. *Administrative Science Quarterly, 4*2, 520-557. doi:10.2307/2393737

Jehn, K. A., & Chatman, J. A. (2000). The influence of proportional and perceptual conflict composition on team performance. *International Journal of Conflict Management, 11*, 56-73. doi:10.1108/eb022835

Jehn, K. A., Rispens, S., & Thatcher, S. M. B. (2010). The effects of conflict asymmetry on work group and individual outcomes. *Academy of Management Journal, 53*, 596-616. doi:10.5465/AMJ.2010.51468978

Keenan, A., & Newton, T. J. (1985). Stressful events, stressors, and psychological strains in young professional engineers. *Journal of Occupational Behavior, 6*, 151–156. doi:10.1002/job.4030060206

Kessler, S. R., Bruursema, K., Rodopman, B., & Spector, P. E. (2013). Leadership, interpersonal conflict, and counterproductive work behavior: An examination of the stressor–strain process. *Negotiation and Conflict Management Research, 6*, 180-190. doi:10.1111/ncmr.12009

Kidder, D. L. (2007). Restorative justice: Not “rights”, but the right way to heal relationships at work. *International Journal of Conflict Management, 18*, 4 –22. doi:10.1108/10444060710759291

Korsgaard, M. A., Soyoung Jeong, S., Mahony, D. M., & Pitariu, A. H. (2008). A multilevel view of intragroup conflict. *Journal of Management, 34*, 1222-1252. doi:10.1177/0149206308325124

Kozlowski, S. W. J., & Klein, K. J. (2000). A multilevel approach to theory and research in organizations: Contextual, temporal, and emergent processes. In K. J. Klein & S. W. J. Kozlowski (Eds.), *Multilevel theory, research, and methods in organizations: Foundations, extensions, and new directions* (pp. 3–90). Jossey-Bass.

Laerd Statistics (2017). Two-way ANOVA using SPSS statistics. *Statistical tutorials and software guides*. Retrieved from https://statistics.laerd.com/

Lee, A. Y., & Aaker, J. L. (2004). Bringing the frame into focus: The influence of regulatory fit on processing fluency and persuasion. *Journal of Personality and Social Psychology, 86*, 205-218. doi:10.1037/0022-3514.86.2.205

Leys, C., Delacre, M., Mora, Y. L., Lakens, D., & Ley, C. (2019). How to classify, detect, and manage univariate and multivariate outliers, with emphasis on pre-registration. *International Review of Social Psychology, 32*, 1-10. doi:10.5334/irsp.289

Lievens, F., De Corte, W., & Schollaert, E. (2008). A closer look at the frame-of-reference effect in personality scale scores and validity. *Journal of Applied Psychology, 93*, 268-279. doi: 10.1037/0021-9010.93.2.268

Litman, L., Robinson, J., & Rosenzweig, C. (2015). The relationship between motivation, monetary compensation, and data quality among US-and India-based workers on Mechanical Turk. *Behavior Research Methods, 47*, 519-528. doi:10.3758/s13428-014-0483-x

Liu, C., Li, C., Fan, J., & Nauta, M. M. (2015). Workplace conflict and absence/lateness: The moderating effect of core self-evaluation in China and the United States. *International Journal of Stress Management, 22*, 243-260. doi:10.1037/a0039163

Lu, L., Zhou, F., & Leung, K. (2011). Effects of task and relationship conflicts on individual work behaviors. *International Journal of Conflict Management, 22*, 131-150. doi:10.1108/10444061111126675

Magee, J. C., & Galinsky, A. D. (2008). Social hierarchy: The self-reinforcing nature of power and status. *Academy of Management Annals, 2*, 351-398. doi:10.5465/19416520802211628

Matherly, T. (2019). A panel for lemons? Positivity bias, reputation systems and data quality on MTurk. *European Journal of Marketing, 53,* 195-223. doi:10.1108/EJM-07-2017-0491

Maxwell, S. E., & Delaney, H. D. (2004). *Designing experiments and analyzing data: A model comparison perspectiv*e (2nd ed.). New York, NY: Psychology Press.

McInnis, B., Cosley, D., Nam, C., & Leshed, G. (2016, May). Taking a HIT: Designing around rejection, mistrust, risk, and workers' experiences in Amazon Mechanical Turk. In *Proceedings of the 2016 CHI conference on human factors in computing systems* (pp. 2271-2282). doi:10.1145/2858036.2858539

McKenzie, D. M. (2015). The role of mediation in resolving workplace relationship conflict. *International Journal of Law and Psychiatry, 39*, 52-59. doi:10.1016/j.ijlp.2015.01.021

Meade, A. W., & Craig, S. B. (2012). Identifying careless responses in survey data. *Psychological Methods, 17*, 437-455. doi:10.1037/a0028085

Miller, C. D., Richard, O. C., & Ford, D. L. Jr. (2019). Ethno-racial similarity, relationship conflict, and trust in supervisor-subordinate dyads. *International Journal of Conflict Management, 30*, 246-269. doi:10.1108/IJCMA-01-2018-0014

Narayanan, L., Menon, S., & Spector, P. E. (1999). Stress in the workplace: A comparison of gender and occupations. *Journal of Organizational Behavior, 20*, 63-73. doi:10.1002/(SICI)1099-1379(199901)20:1<63:AID-JOB873>3.0.CO;2-J

Notelaers, G., Van der Heijden, B., Guenter, H., Nielsen, M. B., & Einarsen, S. V. (2018). Do interpersonal conflict, aggression and bullying at the workplace overlap? A latent class modeling approach. *Frontiers in Psychology, 9*, 1-14. doi:10.3389/fpsyg.2018.01743

Olson, C. L. (1974). Comparative robustness of six tests in multivariate analysis of variance. *Journal of the American Statistical Association, 69*, 894-908. doi:10.2307/2286159

Palan, S., & Schitter, C. (2018). Prolific. ac—A subject pool for online experiments. *Journal of Behavioral and Experimental Finance, 17*, 22-27. doi:10.1016/j.jbef.2017.12.004

Park, S., Mathieu, J. E., & Grosser, T. J. (2020). A network conceptualization of team conflict. *Academy of Management Review, 45*, 352-375. doi:10.5465/amr.2016.0472

Parkes, K. R. (1986). Coping in stressful episodes: The role of individual differences, environmental factors, and situational characteristics. *Journal of Personality and Social Psychology, 51*, 1277-1292. doi:10.1037/0022-3514.51.6.1277

Peer, E., Brandimarte, L., Samat, S., & Acquisti, A. (2017). Beyond the Turk: Alternative platforms for crowdsourcing behavioral research. *Journal of Experimental Social Psychology, 70*, 153-163. doi:10.1016/j.jesp.2017.01.006

Peer, E., Rothschild, D. M., Evernden, Z., Gordon, A., & Damer, E. (2021). MTurk, Prolific or panels? Choosing the right audience for online research. *Choosing the right audience for online research* (January 10, 2021).

Peer, E., Vosgerau, J., & Acquisti, A. (2014). Reputation as a sufficient condition for data quality on Amazon Mechanical Turk. *Behavior Research Methods, 46*, 1023-1031. doi:10.3758/s13428-013-0434-y

Pituch, K. A., & Stevens, J. P. (2016). *Applied multivariate statistics for the social sciences* (6th ed.). New York, NY: Routledge.

Pondy, L. R. (1967). Organizational conflict: Concepts and models. *Administrative Science Quarterly, 12*, 296-320. doi:10.2307/2391553

Riaz, M. K., & Junaid, F. A. (2011). Types, sources, costs & consequences of workplace conflict. *Asian Journal of Management Research, 2*, 600-611. Retrieved from https://ssrn.com/abstract=2004302.

Rudman, L. A. (1998). Self-promotion as a risk factor for women: The costs and benefits of counterstereotypical impression management. *Journal of Personality and Social Psychology, 74*, 629–645. doi:10.1037//0022-3514.74.3.629

Salancik, G. R., & Pfeffer, J. (1978). A social information processing approach to job attitudes and task design. *Administrative Science Quarterly, 23*, 224-253. doi:10.2307/2392563

Searle, S. R. (2006). *Linear models for unbalanced data*. Hoboken, NJ: John Wiley & Sons.

Sliter, M. T., Pui, S. Y., Sliter, K. A., & Jex, S. M. (2011). The differential effects of interpersonal conflict from customers and coworkers: Trait anger as a moderator. *Journal of Occupational Health Psychology, 16*, 424–440. doi:10.1037/a0023874

Spector, P. E., & Jex, S. M. (1998). Development of four self-report measures of job stressors and strain: Interpersonal conflict at work scale, organizational constraints scale, quantitative workload inventory, and physical symptoms inventory. *Journal of Occupational Health Psychology, 3*, 356–367. doi:10.1037/1076-8998.3.4.356

Tabachnick, B. G., & Fidell, L. S. (2014). Multivariate analysis of variance and covariance. In B. G. Tabachnick & L. S. Fidell (Eds.), *Using multivariate statistics* (6th ed., pp. 402-407). Harlow, England: Pearson.

Ting-Toomey, S., & Kurogi, A. (1998). Facework competence in intercultural conflict: An updated face-negotiation theory. *International Journal of Intercultural Relations, 22*, 187–225. doi:10.1016/S0147-1767(98)00004-2

Tinsley, C. H., & Brett, J. M. (2001). Managing workplace conflict in the United States and Hong Kong. *Organizational Behavior and Human Decision Processes, 85*, 360–381. doi:10.1006/obhd.2000.2944

Weider-Hatfield, D., & Hatfield, J. D. (1995). Relationships among conflict management styles, levels of conflict, and reactions at work. *Journal of Social Psychology, 135*, 687–698. doi:10.1080/00224545.1995.9713972

Weinfurt, K. P. (1995). Multivariate analysis of variance. In L. G. Grimm & P. R. Yarnold (Eds.), *Reading and understanding multivariate statistics* (pp. 245-276). Washington, DC: American Psychological Association.

Weingart, L. R., Behfar, K. J., Bendersky, C., Todorova, G., & Jehn, K. A. (2015). The directness and oppositional intensity of conflict expression. *Academy of Management Review, 40*, 235–262. doi:10.5465/amr.2013.0124

Weisburg, S. (2014). *Applied linear regression* (4th ed.). Hoboken, NJ: John Wiley & Sons.

Wright, R. R., Mohr, C. D., Sinclair, R. R., & Yang, L. Q. (2015). Sometimes less is more: Directed coping with interpersonal stressors at work. *Journal of Organizational Behavior, 36*, 786–805. doi:10.1002/job.2002

Wright, R. R., Nixon, A. E., Peterson, Z. B., Thompson, S. V., Olson, R., Martin, S., & Marrott, D. (2017). The workplace interpersonal conflict scale: An alternative in conflict assessment. *Psi Chi Journal of Psychological Research, 22*, 163-180. doi:10.24839/2325-7342.JN22.3.163

Yentes R. D., & Wilhelm, F. (2021). *careless: Procedures for computing indices of careless responding*. R package version 1.2.1.

Young, J. D., III. (2006). *Minimum sample size requirements for two-way MANOVA designs: An examination of effect size, power, alpha level, number of dependent variables, and power of the interaction effect* (Order No. 3220817). [Doctoral dissertation, University of Northern Colorado]. ProQuest Dissertations Publishing.