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Conflict Style is not a Label: The Relationship of Age, Education Level, Work Level, Reason for Assessment, and Time Between Assessments to Conflict Style Change

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Conflict Style is not a Label:
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by

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Abstract

Organizations and research that are only measuring conflict style one time, are treating conflict style as a trait or label. However, conflict style can change over time, and with context. Even the circumstances around the conflict itself may impact how individuals handle conflict. This means that individuals may demonstrate different conflict styles in different circumstances. There is little research that explores the implications of individual conflict style change if measured at different times and in different circumstances. Nor is there much research that explores what factors may have an influence on conflict style change. This study explores whether conflict style significantly changes for individuals who completed the Thomas-Kilmann Conflict MODE Instrument (TKI) assessment two times. The research examined data from 11,821 participants and found a statistically significant relationship between conflict style change and age of participants, the highest level of participant education, and the duration of time between taking the first and second assessment. The results of this study suggested that it may be more appropriate to assess conflict style multiple times if conflict style metrics are contributing to research outcomes or organization training determination and planning. Because conflict style can change for individuals, it may be inappropriate to consider conflict style a trait, or use it as a label. Instead, conflict style may be better suited for the evaluation of organizational conflict learning objectives, and situationally specific individual conflict style state observation.

Chapter 1: Introduction to the Study

Conflict Style describes an individual's typical, default, or preferred approach to dealing with conflict situations (Thomas, 2002; Conerly & Tripathi, 2004; Croucher et al., 2012; Schneider & Brown, 2013). A conflict situation exists in any circumstance where the mutually inter-dependent participants have different or incompatible interests, needs, and/or values (Thomas & Kilmann, 1974). In fact, the mere perception of a difference in interests, beliefs, aspirations or objectives can create conflict (Pruitt & Kim, 2004, p. 7). For the purpose of this study the definitions of conflict was augmented to include the expectation that the parties will have an ongoing relationship. Thus, conflict exists when individuals interacting with one-another in a given situation, who will have an ongoing relationship beyond the current interaction, believe that they have different interests, needs, values and/or objectives from one another. Conflict exists in a time and place that has rules, bounding conditions, physical limitations and a collection of options and preferences. Conflict does not exist in a vacuum. The location, time, and parties involved establish a context that informs on how the conflict will proceed. Further, the various influences on a conflict situation are focused at the point that two individuals meet, thus all conflict is interpersonal. Organizations do not find themselves in conflict. Organizations dictate terms, policies, goals, restrictions to individuals who represent the organizations. It is the individuals who engage with one another in a given circumstance that can find themselves in conflict; even if the conditions that make the situation ripe for conflict are related to organizational imperatives guiding each individual participant.

One of the most widely used tools for assessing conflict style in research and organizations is the Thomas-Kilmann Conflict MODE Instrument (TKI) (Nischal, 2014). The TKI assesses an individual's conflict handling ability and can be used to establish a base metric for identifying training requirements (Thomas & Kilmann, 1974; Shapiro, 2014; Shell, 2001). Following an individual's evaluation and conflict style identification, training can be prescribed that focuses on addressing less than optimal exhibition of conflict handling behavior typical of the assessed conflict style (Kilmann & Thomas, 1977; Durante, 2018; Schaubhut, 2007; Brockman, Nunez, & Basu, 2010).

This study extracted a subset of data from a random sample of over 87,000 individuals who took the TKI assessment one or more times. From the total dataset 11,821 participants who took the assessment at least two times qualified for this study. Less than 14% of participants from the full dataset took the assessment at least two times. Based on this dataset, it is more than five times more likely that someone will only take the TKI assessment one time, versus more than one time. For organizations who utilize the TKI, but only administer it one time, it is likely they will miss the opportunity to use any change in TKI assessment results as a benchmark for measuring an individual's achievement in conflict handling skills, knowledge, experience, or understanding. While these organizations may understand the value in capturing the conflict style baseline, by not administering a subsequent assessment the conflict style measurement becomes a *label* describing how individuals handle conflict, instead of a measure used to observe any change in conflict handling preference and behavior. A measure of change is needed to observe progress and/or effectiveness of various training, mentoring, policy, and

awareness efforts in terms of any relationship this training might have on conflict style (Brockman, Nunez, & Basu 2010).

This study examined whether assessed conflict style significantly changed between the first and second assessments, and whether the relationship of the independent variables age, education level, work level, reason for assessment, and time between assessments, significantly related to observed conflict style change.

Background

Research has shown that organizations can spend more than half of their time addressing interpersonal conflict matters which have the potential of creating a dysfunctional workplace atmosphere and mitigating productivity (Cloke & Goldsmith, 2011; Kohlrieser, 2007; Jensen-Campbell & Graziano, 2005; Lattuch & Young, 2011; Spicer, 2011; Thomas & White, 2011). Berens (2010, p.54) noted that there is both a loss of effective work functioning and a direct "cost of lost work due to stress-related illness" due to interpersonal conflicts in the workplace. Sullivan and McKay (2005, p. 59) found that "the cost of poorly managed conflict is low productivity, reduced trust, and additional disputes" in their study of conflict resolution in hospitals. Hayes (2008) commissioned a study that included 5,000 participants in nine countries that found that employees in the US, on average, spend 2.8 hours per week dealing with conflicts in the workplace; the cost of this paid time to organizations is more than US$359 billion each year. Runde and Flanagan (2012) found that managers often spend 20-40% of their time dealing with conflicts.

The cost of conflict in organizations is high. However, providing training to employees in the areas of conflict management skills, understanding conflict styles, and recognizing personality types is thought to improve an organization's capability to deal with conflict more productively (Katz & Sosa, 2015; Fetherston, 1994; Wall & Druckman, 2002). There is also benefit, both personal and organizational, when conflict is recognized and appropriately managed (Wang & Ting, 2011). Research has explored the link between how individuals handle conflict, their conflict style, and personality (Graziano, Jensen-Campbell, & Hair, 1996; Wood & Bell, 2008). There has also been research on the impact of culture, values, and emotional intelligence on conflict style (Gunkel, Schlaegel, & Taras, 2016; Katz & Sosa, 2015). However, a gap exists in the literature that examines the factors influencing change in assessed conflict style.

How individuals handle conflict, to varying situational degrees, is related to the education, training, regulation, organization policy, and societal influences (Brockman, Nunez, & Basu, 2010; Coleman, 2018; Croucher et al., 2012; Kaushal & Kwantes, 2006). Coleman (2018) discussed the concept of conflict orientation where individual conflict-handling behavior is the result of a complex collection of conflict knowledge and competency, social values, personal anxiety management, and morality, applied to a given situation. Croucher et al. (2012) observed significant differences in conflict style between participants from India and Thailand, which they classified as high-context cultures, versus participants from Ireland and the United States, classified as low-context cultures. Life experiences have been observed shaping how individuals will handle conflict as well. Ziemer's (2014) study of late adolescence children of divorced parents,

found that both the life experience, and later training in conflict handling skills, impacted the participants' assessed conflict style. Thus, any measurement or metric that assesses an individual's ability to deal with conflict may be most appropriately considered a snapshot in time of a transitory state, potentially impacted by a variety of factors. Over time, life experiences, social pressure, and conflict circumstance may all have an impact on assessed conflict style.

This study examined a number of factors to determine their relationship to conflict style change. This study provided additional data in support of research suggesting that conflict style varies situationally (Bakhare, 2010; Friedman, Tidd, Currall, & Tsai, 2000; Shetach, 2009; Uhing & Holland, 2016) and that various factors may contribute to individual changes in conflict style over time and as context changes (Waithaka, Moore-Austin, & Gitimu, 2015). It was observed that an individual's assessed conflict style can change when measured twice. Age, education level, and the time between assessments were found to be factors significantly related to conflict style change, while work level and reason for taking the assessment were not.

TKI Assessment

The TKI is widely used in a variety of settings to help individuals understand how their conflict style can affect intra-personal dynamics (Nischal, 2014; Schaubhut, 2007). For more than 30 years, TKI has helped individuals "identify how two basic conflict characteristics interact to influence how stakeholders shape their actions with regard to their interests" (Trippe & Baumoel, 2015, p.89). The TKI helps to inform upon the "awareness of, and comfort with, the reflexive responses to conflict that can impede

[individual] attempts to claim as well as create value in [conflict situations]" (Brown, 2012, p.81). The TKI identifies how participants deal with conflict situations by assessing their self-identified behavior along two dimensions, concern for self (assertiveness) and concern for others (cooperativeness) (Thomas & Kilmann, 1974, 2007).

Thomas and Kilmann began working together on what would become the TKI in 1971, basing their work on Blake and Moulton's instrument for measuring five modes of conflict-handling behavior (Kilmann, 2014). The new instrument they developed focused on mitigating social desirability bias that they felt was inherent in earlier works (Kraybill, 2018). The TKI moved away from the selection and ranking of descriptions of conflict-handling choices to a forced-choice format. This new format attempted to weight each choice equally for social desirability and to reduce the influence of participants making choices that they thought the researchers wanted, or that the participants felt would make them look better (Kraybill, 2018). As a result of their research, the TKI has been, and continues to be, one of the most widely used conflict style assessment tools in organizational training and research settings (Nischal, 2014).

Concern for Self vs. Concern for Others

Blake and Mouton (1964) defined the Management-of-Differences Exercise (MODE) categorization along two dimensions: assertiveness (concern-for-self) and cooperativeness (concern-for-others). Thomas (1976) expanded on the work of Blake and Mouton (1964), defining the five MODEs as conflict styles. The TKI assessment analysis generates one (or sometimes more) of these conflict styles as the outcome of the assessment.

Analysis of a TKI assessment ranks a participant's score along the two dimensions of MODE (Kilmann, 2014; Thomas 1992; Thomas & Kilmann, 1974). The first dimension of MODE is assertiveness. Assertiveness, or concern-for-self, is defined as a concern for one's self-interest and the willingness to advocate for one's self-interest. Low concern-for-self can manifest as disinterest and disengagement. High concern-for-self can result in competitiveness and manifest as disregard for the consequences to others. The second dimension, cooperativeness, or concern-for-others, is defined as a concern for the interests or well-being of others and the willingness to expend resources in aiding others. Low concern-for-others can manifest as a disregard for the impact of decisions and behavior on others. High concern-for-others can manifest in decision-making based on maintaining relationships with some, or even complete, disregard for the outcome of the conflict.

Conflict Styles

Upon completion of a TKI assessment, the combined concern-for-self and concern-for-others calculations result in a calculated value that can then be categorically represented by a conflict style. The following are the conflict styles used as assessment analysis outcome of the TKI (Thomas & Kilmann, 1974; Kilmann 2011; Kraybill, 2018):

- Collaborating: high concern-for-self and high concern-for-others
- Compromising: medium concern-for-self, moderate concern-for-others
- Competing: high concern-for-self, low concern-for-others
- Accommodating: low concern-for-self, high concern-for-others
- Avoiding: low concern-for-self, low concern-for-others

TKI is designed to identify an individual's default or preferred conflict style, under the assumption that most people will tend to rely on their preferred conflict style, and adjacent conflict styles, in most of the situations that they encounter (Thomas & Kilmann, 1974; Thomas & Kilmann, 1978).

Limitations of the TKI

There are several limitations of the TKI noted by Kilmann himself and others. Kilmann (2011) notes that his experience in real-world situations is that the instructions given before the TKI assessment can have an impact on the outcome. Kilmann (2011) stated, "Rather than a person's responses to the TKI assessment being an average of all the conflict situations, she faces . . . with the modified instructions, her responses on the TKI assessment are specifically geared to her behavior in the workplace" (p. 12). In one case, Kilmann's first instruction was: "Inside this organization, when you find your wishes differing from those of another person, how do you usually respond?" The second instruction was: "Outside this organization, when you find your wishes differing from those of another person, how do you usually respond?" Kilmann found a statistically significant difference in the conflict style distribution across the participant population when the same group of participants was given different sets of instructions before administration of the TKI each of two times (Kilmann 2011). Kraybill (2018) noted that participants may not feel either option is the right choice in a forced-choice format. This means that instead of selecting the best forced choice option; participants taking the TKI are selecting the least wrong choice. Walker (2005) identified statistical limitations in the TKI forced-choice format versus a revised Likert version when working with couples in

conflict. Bakhare (2010) noted how team members can "increase their repertoire of responses to conflict, with the flexibility to use various modes in different situations and in appropriate ways" (p. 42) potentially altering their conflict style because of team expectation and training. Holt and DeVore (2005), Shetach (2009), and Coleman (2018) also discussed how conflict handling behaviors could vary based on circumstance, conflict history, and cultural influences. Coleman's (2018) Conflict Orientation Model recognizes how the complex nature of context can result in cognitively, as opposed to automatically, selected conflict handling behavior. One of the limited number of studies to look at conflict style assessment longitudinally, Kabanoff (1987), observed that MODE assessment, after one year, revealed little association between the MODE assessed scores and observed participant conflict behavior. These various perspectives of conflict handling are ever evolving and may be at odds with the more simple perspective underlying the TKI, that everyone has a default or preferred conflict style.

Problem Statement

Conflict competence training, team building, and personnel management in organizations is often influenced by personality type assessment, conflict style assessment, personal awareness of preferential behavior patterns, and an understanding of how one accommodates for the conflict style of others (Antonioni, 1998; Baron, 1989; Bell & Blakeney, 1977; Bradley & Hebert, 1997; Jones & White, 1985; Schneer & Chanin, 1987; Uhing & Holland, 2016; Whitworth, 2008). Sparks (2018) reviewed how some training programs literally label participants with a conflict style designation then prescribe which conflict competencies are required for those individuals when in conflict

with others; who have also been labeled. Similarly, Ray & Shriner (2008, p. 18) note that "awareness of the tendencies associated with particular subgroups can serve as a useful aid to leaders," limiting conflict resolution analysis by assumptions based on cultural or social labels. This long-standing approach to preparing people to deal with organizational conflict does not recognize, accommodate, or provide assessment and training based on metrics. This study broadened the perspective on assessing conflict style in an organizational setting by suggesting the necessity to adopt an approach which examines differential conflict style assessments, ongoing evaluations of conflict competence, and an understanding of evolving conflict style across circumstances, such as training/education, managerial experience, and life experience. Any conflict competency training that has, at its root, conflict style as a label, and awareness of personal conflict style as a foundational element, may be inappropriate if conflict style can change as context changes; as the results of this study suggested.

This study utilized data derived from a statistically significant population to examine whether assessed conflict style changes significantly between a first and a second TKI assessment. It also explores whether age, work level, education level, reasons for taking the assessment, and the time between assessments, are correlated with any observed conflict style change. Quantitatively demonstrating that conflict style can change significantly for individuals will contribute to setting a new benchmark for design and evaluation of organizational conflict management training and curriculum design. By establishing a new expectation of individual conflict competence through continuous measurement and assessment of conflict style, the bar raises. Organizations can move

beyond awareness as the principle conflict management tool, to the use of established conflict methodology processes to help everyone manage conflict more effectively. Organizations can stop labeling individuals and recognize that conflict handling skill acquisition has a material impact on conflict style and that it is a contextually sensitive state, not an immutable trait of individuals.

Purpose of the Study

This study explored the relationship between changes in first and second conflict styles assessment scores and any relationship to age, education, work level, the reason for taking the assessment, and the time between assessments. By demonstrating a relationship between any of these study variables and a change between the first and second assessment, one may better understand some of the context related to changes in conflict style. If the perception exists that conflict style is unchanging for individuals, a trait rather than a state, then research and training programs may believe that it is only necessary to measure conflict style one time. However, if conflict style can change as various contextual factors change, then research and training efforts should recognize the necessity of perceiving conflict style as a state that should be measured more than once. Furthermore, one should examine context when assessing conflict style, noting the existence of factors that may correlate with any assessed conflict style change.

An underpinning belief of this study is that conflict style expression is a learned behavior. “The skills involved in managing conflict are learned behaviors. None of us is born knowing how to deal with differences of opinion, arguments, or turf wars” (Joelson, n.d., p. 2). Kosic et al. (2012, p. 5) argue that “the family context is one of the most

important sources in which adolescents develop (or fail to develop) and practice important skills in conflict management," and Berens (2010) observed that adult teams can reduce conflict as they acquire new skills for managing conflict situations. Conflict style learning may happen through observation and social conditioning, as with children in family settings, or via a more cognitive and focused acquisition of conflict-related knowledge, such as team conflict competency training. Therefore, any understanding of how people acquire and utilize knowledge is foundational to the understanding of how conflict styles manifest. This study examined factors influencing the conflict style adopted by individuals through the lens of three learning theories: Behaviorism, Cognitivism, and Constructivism. These three theories inform upon how people acquire, retain, and utilize knowledge, which they then use in intrapersonal communication and social context adaptation.

Recognizing conflict style as a state that can change, based on contextual factors, for example, education or practical experience, should contribute to the body of research, which informs upon the use of conflict style as a metric in research and organizational training. Conflict style assessment is a view of an individual's preferred way to deal with conflict as a snapshot in time. Allowing time to move on, and changing context may impose upon an individual training and/or practical experience that then informs on how they behave in conflict situations. Quantitatively demonstrating that conflict style for an individual can change establishes a new base assumption for organizational training and conflict management research. This study explored whether conflict style is an immutable trait, or a state that can potentially vary over time given the right changes in context.

Research Questions

This study looked at the assessed conflict style of individuals who took the TKI assessment on two separate occasions, to determine if a relationship exists between age, work level, educational level, the time lapse between the assessments, and the reasons for taking the assessment, and any changes in assessed conflict style between the initial and second assessment. The research questions addressed by this study were:

- RQ1: Can an individual's assessed conflict style change?
- RQ2: Is there a relationship between any changes in conflict style and age, work level, education level, reason for taking the assessment, and time between assessments?
- RQ3: Which conflict styles are most likely to change during the period between the first assessment and the second assessment?

These research questions statistically examined the results of a first TKI assessment against the results of a second TKI assessment. Determining if there was a statistically significant change in first-to-second assessed conflict style for each individual addressed RQ1. RQ2 was explored by analyzing whether there was any correlation between the categorized values of the independent variables (age, education level, work level, reason for taking assessment, and time between assessments) and a change in conflict style between the first and second assessment. In addressing RQ3, the data was examined to determine if the conflict style from the first assessment correlates to the conflict style from second assessment for those individuals whose conflict style changed.

Outline of Dissertation

The following chapters examine other research and literature related to this study, the study research methodology, study results, and finally interpretations, recommendation and conclusions.

Chapter 2, Literature review, begins with a discussion of how learning theories are integral to this study. An in depth discussion of the TKI then leads into a review of research that has explored factors that may have a relationship to conflict style change Next a review of some of the ways organizations use conflict style and a review of research relating to personality type and conflict style assessment in organizations. How conflict skills training and reflexivity can help change perspective on conflict and conflict style then ties in research that examined how conflict competency in organizations can create better, more productive workplaces.

Research Methodology is covered in Chapter 3. The research design and rationale are detailed and the six study hypotheses explained in relation to the research questions (Chapter 1) and theoretical foundations (Chapter 2). A breakdown of the methodology, sampling procedures, variable representations, statistical analysis and instrumentation are followed by a description of the dataset, discussion of assumptions and issues of validity. Finally, ethical procedures and IRB approval are noted.

Chapter 4 provides, in detail, the outcomes of the descriptive and inferential statistical analysis performed on the study data. Statistically significant results were found for conflict style change, and the relationship to conflict style change for age, education level, time between assessments and initial conflict style. Work level and

reason for assessment were not found to be significantly related to conflict style change. Additional observations and a summary of the study results conclude Chapter 4.

The final chapter, Chapter 5, interprets the connection between the study results and the learning theories (Chapter 2), providing additional insight to support the research that suggests conflict style is learned and expressed as a state, dependent upon context. Recommendations are made for further study into several areas, including other factors not addressed by this study that may be related to conflict style change. Several implications of this study's results are reviewed, the most important of which is that organizations should not rely upon measurement of conflict handling style to be predictive of ongoing or situation conflict handling choices by individuals. The final section in Chapter 5 contains the study conclusions, which focus on the finding that conflict style can change, and contextual factors exist that have a significant relationship to that change. Further, organizations and research should recognize that conflict style assessment and measurement only observes a state that is a snapshot in time, and any appropriate use of conflict style should consider multiple assessments and control of contextual factors which are related to conflict style change in individuals.

Limitations

The dataset utilized in this study contained the results of TKI assessments administered for a variety of reasons. Individuals may have completed the TKI assessments used in this study as a component of training programs or as participants in other research studies. As an element of the anonymizing of data, specifics regarding any training, exercise, study, or activity the participants took park in between the initial and

second TKI assessment faced removal from the dataset and were unavailable for review as part of this study.

All of the participants in the studies that contributed to the dataset used in this study were adults who took the TKI assessment in the United States. Participants may not have been residents or citizens of the United States. All participants took the assessment in written US English, even if participants may not have had US English as their primary language. Thus, the limited geographical and language scope of this dataset means that the generalizability of this study should be constrained to English speaking adults who live and/or work in the United States.

Significance of Study

This study observed a significant change in individual conflict style between the first and second assessments. Because of this finding, organizational training and research which use conflict style assessment should be cognizant of the possibility that participant conflict style may change from any initially assessed conflict style. Further, any assumptions that conflict style is static, or an individual trait, may be inappropriate. To more appropriately utilize conflict style assessment, training and research instrument administrators should consider context factors that may be related to incidences of individual conflict style change and that multiple assessments per individual might reveal useful data. Context factors that were observed in this study and revealed to correlate with conflict style change included the participant's age, education level, and time between assessments.

Observation revealed that the relative distribution of conflict style across the population did not significantly change between the first and second assessment. However, a significant proportion of participants did change their conflict style. This observation suggests that comparing conflict style as a percent distribution across a population between the first and second assessments may be a superficial and misleading observation. Researchers and training programs should be cognizant of this observation and endeavor to delve more deeply into first versus second assessment statistics before drawing any conclusions based on conflict style relative to population distribution.

The observation that conflict style can change, and various contextual factors may be related to this change adds to the body of research regarding conflict style assessment. The real-world implications of this study reinforced that conflict style is a state, not a trait, and that conflict style assessment should be administered multiple times for each individual to capture any conflict style change adequately. One should not use conflict style as a label, but more appropriately as a metric that may contribute to a better understanding of how changes in context, such as training and practice of conflict competency skills, impact changes in how individuals perceive and handle conflict.

Chapter 2: Literature Review

Introduction

The following sections explore long-standing impacts of conflict style assessment on how organizations address conflict, the tools utilized in research and organizational training for assessing various conflict-related metrics, and the perceived benefits of existing approaches to managing organizational conflict. This section includes a review of some contemporary views regarding learning and improving conflict competence; an emerging perspective on the integration of conflict competence measurement as a component of organizational performance evaluation; and opportunities and benefits that a new understanding of an evolving conflict style, informed by education and process, can have on the understanding of conflict in organizations.

Many organizations base their management, conflict resolution, and team development training on assessed employee conflict style awareness (Sternberg and Soriano, 1984; Graziano, et al., 1996; Wood & Bell 2008). There are two underlying assumptions used to validate the concept that if people are aware of their own conflict style, they can then navigate difficult situations and relationships. The first assumption is that in knowing their own conflict style, and the conflict style of the other parties to a conflict, certain guidelines can be used to create a situationally appropriate approach to managing conflict (Wood & Bell 2008). The second assumption is that conflict style is unchanging, and as individuals move through life, they need to be constantly aware of the necessity to accommodate their conflict style. Other research holds that culture, values and emotional intelligence provide a learned basis for perception and behavior in conflict

situations (Gunkel, Schlaegel, & Taras, 2016; Katz & Sosa, 2015). However, there is a gap in the literature that examines the factors influencing change in assessed conflict style. This study explored what influences a change in conflict style, expanding on situational conflict style variation (Bakhare, 2010; Friedman, Tidd, Currall, & Tsai, 2000; Shetach, 2009; Uhing & Holland, 2016) and conflict resolution training impacts on conflict style (Waithaka, Moore-Austin, & Gitimu, 2015). Conflict competency is not a natural, hereditary facility (Joelson, nd). Acquiring skills for managing and resolving conflict is an exercise in learning, practice and iterative improvement (Kosic et al., 2012). It is important to recognize the role learning plays in manifesting conflict style for individuals.

Theoretical Foundation

The theoretical foundation of this study was based in areas of learning, information acquisition, and the resulting observable changes in behavior that result from learning. Situations exist where formal education, daily social context, and the individual application of understanding (in conjunction with environmental feedback) influence conflict style. What individuals know about managing conflict is a combination of what they were taught, and how successful they were when they tried to apply what they learned. While learning can be very complex, these theories subscribe to a Postpositivist Paradigm that suggests there are quantifiable methodologies for measuring and influencing knowledge acquisition, utilization, and exhibition through behavior. Of great importance to the author is that relevant theory be falsifiable, and thus predictive (Hacking, 2012, p. 9). The theories incorporated here explain some influences on

individual conflict style, but also suggest the possibility of predicting conflict style based on education, training, and establishing social and cultural reinforcement.

Conflict style expression is a learned behavior (Joelson, n.d.). That learning occurs via some combination of observation, social conditioning, and cognitive acquisition of knowledge (Kosic et al. 2012; Berens, 2010). What individuals do with what they learn is part of what this study addressed. However, an understanding of how people acquire and utilize knowledge is foundational to the understanding of how conflict styles manifest. This study examined factors related to the conflict style adopted by individuals through the lens of three theories: Behaviorism, Cognitivism, and Constructivism. These three theories inform upon how people acquire, retain, and utilize knowledge, which is then used in intrapersonal communication and social context adaptation (Berger & Luckman, 2011; Love, 2012; Wang, 2012).

Behaviorist Learning Theory

Behaviorist Theory addresses the association between stimuli and response, action and consequence, and how individuals adapt based on environmental and social queue feedback (Love, 2012; Wang, 2012). It is the subtle, everyday learning of how to do things, within the confines of any environment that provides some signal to the learner when one does something right or at least good enough. Parents, siblings, friends, coworkers, authority figures along with physical elements of an environment, contribute to that feedback. As individuals explore, grow, and push boundaries, they receive feedback on the effectiveness and appropriateness of exhibited behavior from others proximate to that behavior. Some of this feedback is formal or explicit, some subtle, and

perhaps open to interpretation (Love 2012). Finding what is right, or at least what works in a given situation, is then used as a generalization of what is right in similar situations. Behavioral response can become automatic based on recognized stimuli. Repetition helps solidify behaviorist learning. Finding recognized patterns and recalling successful responses provides comfort and builds confidence. Many behaviorist learnings never go through any cognitive validation beyond the observation that a behavior worked or did not result in a negative consequence. According to Berger and Luckman (2011), "All human activity is subject to habitualization. Any action repeated frequently becomes cast into a pattern" (p. 51). Duhigg (2012) defined habituation as behavioral conditioning, tied to emotional interpretation. The combination manifests in a resistance to change. This encourages people to continue doing what they have always done because of habituation. Behaviorism envelops modelling and mimicry, and is sometimes referred to as observational learning. Behavior learned this way may be sufficient in the learned environment, but may not be the optimal solution, or even appropriate, in different, but similar, situations. Behaviorism is where good and bad habits come from, and is one of the primary mechanisms for learning about social interaction in children. This is how most people learn to deal with conflict, they adopt what they see that works, from those around them when they are growing up (Kosic et al. 2012).

Cognitive Learning Theory

Cognitive Theory of learning originates from the purposeful or specific acquisition of new information and the conscious processing and integration of that information. Cognitive Theory recognizes the functionality and limitation of the physical

brain and incorporates that knowledge into mechanisms for presenting and understanding new information (Love, 2012). Modified behavior can occur through cognitive learning, but requires a conscious effort to overcome habituated or socially constructed responses. Assimilation of new information is not instant, or even complete, in many cases. Cognitively acquired information may be at odds with behavioral or constructed learnings, and overcoming the habituated, social or emotional attachment to old ideas in favor of new cognitively acquired knowledge can be a difficult task (Love, 2012).

Learning that takes place in formal education environments is consistent with Cognitive Theory. In this environment cognitive learning can flourish. The environment itself provides repetition, feedback (e.g. testing), and social acceptance of what is being taught. Cognitive Theory is where conflict competency skills, tools and processes can be acquired through explicit procurement of knowledge. In this way Cognitivism informs upon conflict handling behavior, and may contribute to an individual's conflict style.

Constructivist Learning Theory

For individuals and groups, reality is bounded by the knowledge they have direct experience with. Behavior and social interaction is grounded in language, customs, cultural and historical contexts and the perception of reality, facts, and the laws of nature. Individuals are guided and bounded by the knowledge that they have been granted access to, within their context and experience (Berger & Luckman, 2011, p. 102).

When people are socialized within a group, or community, their experience and perspective are an adoption and adaptation of the constructed reality of the community. "[P]rimary socialization involves more than purely cognitive learning. It takes place

under circumstances that are highly charged emotionally" (Berger & Luckman, 2011, p. 131). Pressures to conform and participate, along with identity development, functionally, sometimes forcefully, impose the socialized understanding of reality on community members. Members of a community will adapt their perspective on the world around them to accommodate that of the community where they choose to participate. This behavior is enforced and enhanced by social interaction through language and subtle and overt community behavior that reinforces conformity and punishes divergence.

Language is the principal mechanism for constructing the shared social reality of a community. "In a broader sense, we may say that as we communicate with each other we construct the world in which we live" (Gergen, 2015, p. 5). Language in this context can be broadly understood to include vocabulary, symbology, and non-verbal intra-personal communication. "An understanding of language is thus essential for any understanding of the reality of everyday life" (Berger & Luckman, 2011, p. 36). "All […] communal constructions, born within relations, saturated with values, [are] useful in some way for those who share them" (Gergen, 2015, p. 27). This socially constructed meaning is expressed using a community-specific working vocabulary.

"Institutionalization occurs whenever there is a reciprocal typification of habitualized actions by types of actors" (Berger & Luckman, 2011, p. 53). This implies that institutions, or communities, exhibit consistent behavior and resist change to that behavior. "Individuals socialize by internalizing rules for specific settings and act in ways that reflect organizational principles. Their actions are then replicated to become new behaviors. Moreover, patterned behavior and interactions become organizational

norms" (Liu, Inlow & Feng, 2014, p. 159). To convince an individual to change socially constructed patterns of thought and behavior is not merely a cognitive process of supplying new data, but is also dependent upon engaging emotion and repetition to create a new habitualization that is consistent with community norms.

For this study, it is critical to understand how social construction impacts individual approaches to conflict. First, environment, family, culture, training, essentially the context of a life, materially impact every individual's perception and understanding. Thus, how an individual responds to conflict, their conflict style, is molded by their context. Second, Constructivist Theory holds that, through the acquisition of knowledge, negotiation of working vocabulary, and continuous adaptation to context, the essence of an individual can change. Habits of thought and behavior can be modified. A conscious effort to negotiate working vocabulary, reframe perception, and continually assimilate new data may have a material impact on individual conflict style.

A socially constructed context will both inform upon and bound the conflict style of individuals who subscribe to that context, for example family as described by Kosic et al. (2012). Through adherence to policy, procedure, rules, regulations, even law, individuals will establish a perspective and working vocabulary that can have a material impact on their expressed conflict style. Constructivist Learning Theory examines what we know and how we utilize that information based on an understanding of knowledge acquisition and contex. Personal experience, including issues of socialization, culture, and religion can frame specific knowledge differently for each individual. Behavior patterns associated with specific conflict styles may be the result of how information

about handling conflict was presented and modelled differently for individuals with similar access to information, but a different cultural, religious, or social context.

Postpositivist Paradigm

Positivism focuses on factual knowledge which can be repeatedly observed, measured and determined to be valid. The concept of scientific observations being valid can be discussed from a variety of perspectives, but most encompass the concept of reproducibility within the framework of currently acceptable measurement using reliable contemporary tools and techniques (Winter, 2000, p. 4). The first requirement of testing for valid reproducible work involves the use of instruments that are accurate. Accuracy involves both the selection of an appropriately precise tool and a tool that consistently and reliably returns the same value for measurements taken in different circumstances, including at different times. Thus, if we want to accurately measure the distance between two walls we would choose a laser distance meter or a tape measure, not a pedometer or the odometer of a car. The second test for valid reproducible work addresses the appropriate selection of that which is to be measured (Winter, 2000, p. 5). Postpositivism takes the perspective that not all facts can be known, and that the world is a complicated place. Unseen interactions, influences that we cannot yet measure accurately and things that we simply do not know that we do not know can all contribute to an observed, measured event. Acknowledging this means that the selection of something that is representative of, or similar to, the phenomenon to be measured, in most circumstances will only provide an approximation or a temporally inconsistent substitute for the measurement of the phenomenon itself. For example, to measure the volume of a

subject's stomach, one could measure the amount of water a subject can consume before feeling full. This technique, while doing no permanent harm to the subject, introduces several degrees of separation between the measurement (volume of water) and the actual volume the research intended to study, that of the subject's stomach. The subject's perception of feeling full, any existing content in the stomach, and a variety of other physiological factors could interfere with accurate and reliable (reproducible) measurement.

A significant acknowledgement of Postpositivist thinking is that as understanding changes, as new knowledge is acquired, and as methods and tools of measurement improve the facts will change. Facts that were once supported by the state-of-the-art scientific technique are subject to review, revision and reassessment when new more powerful, precise or appropriate measurement tools become available. What was acceptably valid and reliable at one time, may, through the advancement of data collection or measurement, not be considered valid now. Thus, it is always important to recognize "that is the way we always do it" is not sufficient in the face of new tools for more accurately measuring the appropriate subject/target. Revisiting long held beliefs, even those that were once considered valid and reliable, may result in new understanding, different valid assessments and more reliable measures. In the meantime, the Postpositivist can discuss research from the perspective of what can be measured and observed and recognize that influences and interactions may be correlationally significant, without being exhaustively determined to be causative. From a positivist

perspective, this is not only an acceptable evolution of understanding, but a necessary, required approach to maintain the validity and reliability of facts.

There is no single valid approach to research. The choices the researcher makes in terms of process and methodology can, and usually do, introduce any number of valid options for observing and measuring study outcomes. Thus, the validity of research must be subject to both clear and transparent selection of study resources (both subjects and tools), and a detailed recording of the methods employed during the study. Selection of a valid research approach, and an appropriately representative sample and statistical test, establishes a basis for generalizing findings. Generalization of findings from a specific study to a larger population is a key concept of quantitative research (Winter, 2000, p. 8). An empirical approach can lend validity to research, without necessarily being all encompassing and infinitely precise. This study drew data from a very large sample collected over an extended period of time, analyzed using widely accepted statistical techniques to validate and generalize findings, in a reproducible way, that establishes, within the confines of current understanding, a reproducible study of conflict style as a derived phenomenon, dependent upon learned and habituated behavior, related to circumstance and time.

TKI Assessment

Thomas-Kilmann Conflict MODE Instrument ("TKI") has its foundations in research that examined and classified behavior using Management-of-Differences Exercise ("MODE") categorization that identified five MODEs based on measurement along two dimensions: assertiveness (concern-for-self) and cooperativeness (concern-for-

others). Thomas (1976) expanded on the work of Blake and Mouton (1964) defining the five MODEs, or conflict styles still used in the current TKI:

- collaborating
- compromising
- competing
- accommodating
- avoiding

MODE Dimension: Assertiveness / Concern-for-Self

Concern for one's self interest and the willingness to advocate for one's self interest, also known as assertiveness, is generally represented as the Y-axis on graphical representations of conflict style (see Figure 1 below). Low concern-for-self can manifest as disinterest. A person may simply not care about their own stake in a conflict situation, and wants to avoid or disentangle themselves from it without investing their own time, energy and resources in the conflict's resolution. High concern-for-self can result in competitive or dominating behavior designed to prevail in a conflict at all costs, with little or no regard to the implications to others.

MODE Dimension: Cooperativeness / Concern-for-Others

Along the X-axis in graphical representations of conflict style, is the concern for others, also known as the cooperativeness, MODE dimension. Low concern-for-others behavior manifests when the concerns for other parties to a conflict do not influence someone's assessment, analysis, and behavior of the conflict. High concern-for-others

can result in choices and behavior where someone cares so much for the other party's outcome in the conflict that their own self-interest is set aside.

MODE Measurement

By combining concern-for-self and concern-for-others in a two-dimensional representation, value pairs can be represented spatially to visually demonstrate the balance and contrast of concern-for-self and concern-for-others over their respective continuum of possible values. MODE then assigns a categorization to areas of the 2-dimensional space into which all possible values will fall.

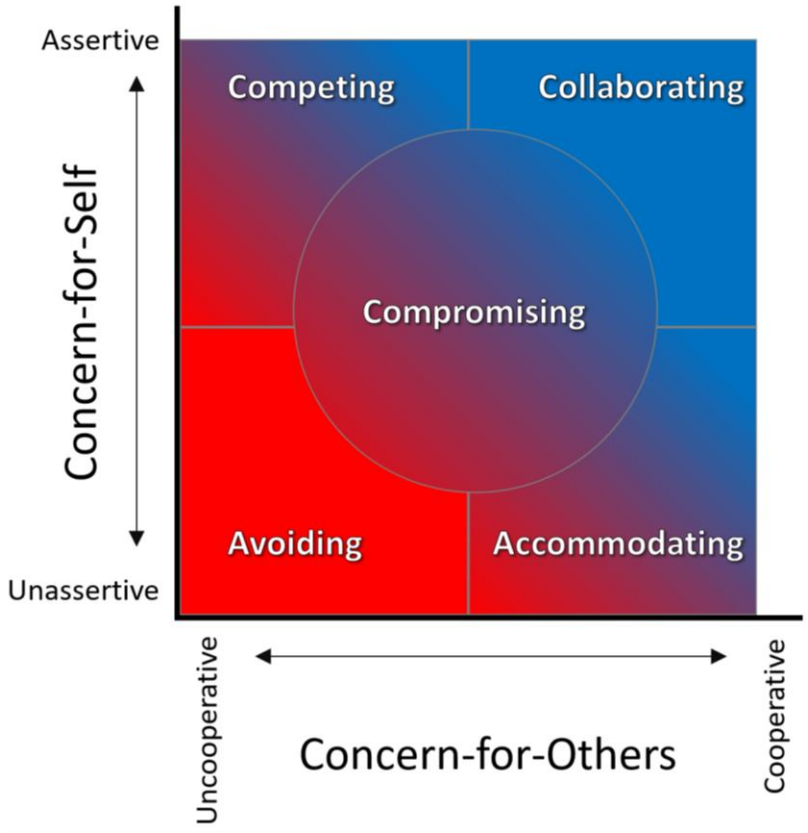

Figure 1. Graphical representation of Conflict Style. MODEs along two axis, Assertiveness / Concern-for-Self and Cooperativeness / Concern-for-Others.

The TKI survey questions are designed to force a choice between higher versus lower concern-for-others and more or less concern-for-self. The resulting balance then represents a participant's preferred behavior in the assessed conflict situations. The conflict situations presented in the TKI are designed to provide clear and contrasting concerns between the participant and imagined other parties that appear to be incompatible.

Collaborating – (Assertive: high, Cooperative: high): Individuals who are collaborative seek to find a conflict resolution that satisfies their own interests while exploring options for also satisfying the interests of the other parties. Collaboration often involves a willingness to explore one's own self-interest and make an effort to both identify the interests of other parties and seek out ways to also satisfy the other's interests.

Compromising – (Assertive: moderate, Cooperative: moderate): Individuals who are compromising are seeking acceptable solutions, that may not meet all of the needs of either party to a conflict, but that will meet a minimally acceptable level of interest satisfaction for all parties. Compromising generally focuses on outcomes without significant effort expended on exploring interests or options. Compromising can include expedited decision making because of time constraints and a lack of willingness or ability to spend the time and effort necessary to rise to the level of collaboration.

Competing – (Assertive: high, Cooperative: low): Individuals who are competitive are not concerned with the outcomes or feelings of other parties to conflict. Competing behavior can be defensive, in terms of asserting rights or privileges, and can

be power oriented when individuals use position, strength, or other situationally valued assets to get what they want, win or otherwise prevail in the conflict.

Accommodating – (Assertive: low, Cooperative: high): Individuals who are accommodating are willing to put aside their own concerns, feelings and interests and allow the outcome of the conflict to only focus on satisfying the other parties' interests. This self-sacrificing behavior may be based in feelings of subservience to power, charity, generosity, or assessment of self-interest versus conflict resolution time and effort. It is important to note that this is not an "I just don't care" situation. This happens when a conflict does exist and both parties have conflicting interests. Accommodating behavior is a suppression of self-interest versus the interests of others.

Avoiding – (Assertive: low, Cooperative: low): Individuals who avoid conflict are not willing to advocate for their own self-interest, nor do they care that other conflict parties' interests are met. Avoiding behavior manifests as finding ways to not engage the conflict at all: postponing, withdrawing, and deflecting. Avoiding behavior makes no effort to address and resolve any aspect of a conflict situation, including addressing interests, maintaining relationships, or preventing escalation and other negative outcomes.

In any given context, an individual is capable of expressing concern-for-self and concern-for-other to varying degrees along their respective continuums. As a result, individuals can demonstrate behavior that falls into each of the conflict styles. Overall, the intent of the TKI is to identify an individual's preferential conflict style, the default approach that someone comes to conflict situations with (Thomas & Kilmann, 1974). The

working assumption is that most people will tend to rely on their preferential conflict style and adjacent conflict styles in most of the situations they encounter. No one will have a single, exclusive conflict style, nor will they exhibit equal preference for all conflict styles. Some individuals will have a preferential conflict style that falls at a point along the possible continuum of values for concern-for-self and concern-for-other that puts them sufficiently close to two conflict styles that their TKI assessed conflict style is calculated to have an equal preference for two conflict styles simultaneously (Thomas & Kilmann, 1974; Thomas & Kilmann, 1978).

Contextual Conflict Style

International studies have identified that culture and social norms impact the exhibited, and self-identified, conflict style in high context societies, manifesting in a higher likelihood of accommodating and avoiding conflict styles. In low-context societies, conflict styles are more predominantly competing and compromising (Croucher et al., 2012, p. 64). The foundations of Dual Concern Theory postulates that an individual's personality and the situational circumstances are contributing factors to a given concern-for-self and concern-for-other assessment. Carsten et al. summerized De Dreu, Weingart & Kwon, 2000; Pruitt & Rubin, 1986 and Van de Vliert, 1997 in stating that "[s]table individual differences such as social value orientation, power motivation, and the need for affiliation, as well as situation cues such as incentives, instructional primes, time pressure, level of aspiration, and power preponderance, predict conflict management [styles]." (2004, p.9) Rahim (1986) has also discussed how expressed conflict handling behavior adapts to the specific conflict situations. Other studies contend

that an individual's preferred conflict style is determined by personality traits in combination with demographic and social normative influences (Antonioni, 1998; Park & Antonioni, 2007; Wood & Bell, 2008; Gbadamosi, Baghestan & Al-Mabrouk, 2014; Gunkel et al., 2016, p. 569). This helps establish that conflict style is neither perpetually tied to Personality Type, nor is it immutable. These studies establish the possibility that, because culture, including racial, economic, religious and other social influences, is a determining factor in preferred conflict style, changing an individual's cultural context may lead to a change in their preferred conflict style. Even those who explored that conflict style is a trait correlated with personality type, concede that learnings acquired in situations with differing levels collectivism and with higher power differential can impact conflict style independent of personality types and traits (Gunkel et al. 2016).

In addition to an individual's broader cultural environment, specific individual conflict situations can, over time and with repetition: a) elicit non-preferred conflict handling behavior based on the "perceived appropriateness of conflict response[, …] depending upon the nature of the conflict and the status of the other party." (Pilkington & Richardson, 1999, p. 5); and b) individuals who repeatedly experience similar conflict situations learn to recognize these, and implement various types of solutions, including learned collaborative, creative, problem-solving approaches (Pilkington & Richardson, 1999). Brewer et al. found that managers make cognitively selected contextually appropriate conflict handling choices, contrary to the study expectation that managers would engage in conflict handling behavior consistent with their assessed conflict style (2002, p. 90).

A number of authors across a variety of studies support the concept of a situationally appropriate conflict style, rather than and arbitrarily defined best conflict style (Jameson, 1999; Rahim, 2002; Farmer & Roth, 1998; Friedman et al., 2000; Graziano, et al., 1996; Callanan & Perri, 2006, p. 132). In environments where expectations, support structures, incentives and the types of conflict encountered are fairly stable, individuals will adapt to and conform with organizationally mandated or socially prescribed conflict behavior (Carsten, Dirk Van, & Dijkstra, 2004, p. 9). This is consistent with the Constructivist Theory of learning, in that individuals will adapt their behavior to meet socially constructed expectations. This means that conflict style can potentially be influenced, or even directed, at least within the confines of situationally familiar circumstances. Note, that this ability to influence a change in conflict style does not necessarily mean that change will result in a net positive change in conflict style; it is merely an acknowledgement of the ability for individuals to make permanent changes to their preferred conflict style given the right circumstances.

Combining the observations that conflict style is influenced by culture, and conflict behavior can be cognitively selected for a given situation, yields the derived logical conclusion that the selection of non-preferred but situationally appropriate/prescribed/managed conflict handling behavior will impact, over time and with repetition, an individual's preferred conflict style. Which then suggests that it may be possible to influence primary conflict style, and exhibited conflict-handling behavior, by creating the proper combination of incentives, expectations, education and perception in a consistently applied and available context.

In essence, conflict style is learned. Whether that learning comes through trial-and-error (Behavior), formal education (Cognitivist), or is socially constructed (Constructivist), individuals acquire their understanding of what conflict is, and how it should be addressed through a process of information transfer, practice and correction. The conflict situations individuals find themselves in may be very similar, but how those individuals behave will be determined by what they have learned, accepted and choose to practice about conflict communication. Changing jobs, relocating geographically, participating in new organizations, could all, potentially, sufficiently change the context that an individual exists in, such that, over time, the individual will learn and practice new conflict behavior, effectively modifying their conflict style.

Emotional Intelligence Impacts on Conflict Style

Individuals who can both recognize in themselves and exhibit conscious control over the expression of their emotions have higher levels of Emotional Intelligence ("EI"), and this ability can be assistive in situations where engaging in negotiations or problem solving exercises that may involve reduced self-interest, are an option in conflict handling (Gunkel et al., 2016, p. 580). EI also includes the abilities to perceive accurately, appraise and express emotion; stimulate feelings that facilitate thought; understand emotions; and demonstrate control of emotions (Mayer and Salovey, 1997). Individuals with high EI appear more relaxed, and spend less mental energy dealing with their own emotions, and thus are better able to address issues with increased focus in their work and life environments (Chen et al., 2016, p. 51).

Previous studies that attempt to link EI do conflict style have demonstrated ambiguous results (Schlaerth, Ensari, & Christian, 2013). The complexity of the relationship amongst culturally appropriate emotional expression and the magnitude of a contextual impact on an individual's personal emotional response is thought to be a complicating factor in establishing an EI to conflict style relationship (Gunkel, Schleagel, & Engle, 2014; Miller, 1997; Shao, Doucet, & Caruso, 2014). Hofstede (2001) contends that collectivist norms and rules of behavior may supersede individual demonstration of EI, and, for example, issues of losing face may have a larger impact on exhibited behavior, than would individual EI. "[EI] may be influenced by the cultural background of the individual and lead to different conflict handling styles." (Gunkel et al., 2016, p. 581)

Based on these results, it can be argued that behavior, the ultimate measurement of conflict style, may be circumstantially related to EI, but may also be influenced by culture, or more specifically, context, and situationally mandated norms of behavior. However, Basogul & Özgür (2016, p. 5) found "positive correlation between the general mood component and the compromising, dominating, and obliging conflict management strategies, but a negative correlation between the same component and the avoiding strategy," suggesting that high EI may be a contributing component of conflict handling selection. While there is by no means a consensus, EI appears to be subservient to contextually appropriate norms for conflict handling in determining individual conflict style (Basogul & Özgür, 2016, p. 6; Bell & Song, 2005, p. 30). These findings reinforce

that conflict style, as manifest through behavior, is more likely a learned, context sensitive phenomenon than a trait predicted by EI or personality.

Cultural Intelligence

Cultural Intelligence ("CI"), or the ability to comprehend and adapt to a given context, can potentially have a larger role in determining situational conflict behavior than either an individual's assessed conflict style or their level of EI (Basogul & Özgür, 2016; Bell & Song, 2005). A CI sensitive perspective analyzes a response or course of action using normative reasoning. This means that the expectations, perceived endorsement or critique of a community may be weighed more heavily than a more rational/instrumental assessment when individuals are making behavioral choices. Community "expectations act to moderate the potential ruthlessness implicit in rational/instrumental reasoning (where the ends justify the means)" (Thomas, 1992, p. 664). Constructivist learning theory is at play here: those exhibiting high CI, will have learned the boundaries, preferences, and expectations of the community, and will be more likely to respond to conflict situations within the acceptable boundaries of community behavior expectations. Conflict handling behavioral norms can be shaped by larger contextual influences. Individualistic versus collective social norms can significantly influence conflict style (Gunkel et al., 2016). In fact, a conflict can create its own context. If the parties to the conflict come from different cultures, the context of the conflict itself can help determine the behavior handling choices of the parties (Gonçalves et al., 2019)

High CI, the ability of the parties to recognize and understand the different cultural traits and characteristics of the other, can lead to opportunities to recognize and

focus on similarities in values and behavioral norms and not on perceived stereotypical differences (Brett, 2000, p. 103). CI allows for cognitive behavior handling selection that is context sensitive, providing an opportunity for a conflict resolution process to prevail over the parties' historical cultural fear, misunderstandings and bias. High CI is firstly about learning about the culture of others, and then secondly being able to use that knowledge effectively.

Management Experience Impacts on Conflict Style

Eckstat (2002) and Vestal (2011) found a significant relationship between years of management experience and increased competitive conflict style. Thomas & Thomas (2008) identified a more specific impact of management level: "Assertiveness [Competitiveness] increases monotonically at progressively higher organization levels, while unassertive styles decrease. Compromising shows a curvilinear relationship to organization level, decreasing at both the highest and lowest levels." While competitiveness, in these studies, seems to increase with years of management experience, what is perhaps most noteworthy is that conflict style appears to change to adapt to participants' years of experience and role. Whatever the reason for the observed increase in competitiveness, it appears that some combination of experience, new information, and organizational expectation contribute to a change in conflict style.

Age / Life Experience Impacts on Conflict Style

Much of the existing research on relationships between age and conflict style are consistent with Shabbir's et al. (2018) findings that age, independent of other factors, does not significantly relate to conflict style. An exception, however, seems to be

amongst young adults. Gbadamosi et al. (2014) found that "[t]he older students were discovered to use more avoiding, while younger students are more likely to be competitive in nature" (2014, p. 245). The take away from both of these observations is that conflict style can change (competitive in younger versus avoiding in older students) and that age, by itself is not a predictor of conflict style. This is consistent with an expression of a Constructivist learning evolution as younger students receive negative feedback from peers and the learning institution with regard to Competitive conflict style behavior, and modify their behavior over time.

Shen, et al. (2018) observed a shift to a more constructive conflict resolution behavior amongst students who participated in play sessions facilitated by a robot mediator, as compared to a control group. This study suggests that new information, and behavioral modelling can have a significant effect on conflict handling behavior. However, Tams et al. (2018) noted that older populations are adversely impacted by "technostress" and rapidly evolving organizational change environments and may be overwhelmed by new ways of doing their job leading to some resistance to acquiring new skills. Tu et al. (2005) found that older individuals have a preference for work environments and procedures that they have grown accustomed to and that their learning capacity can decrease with age, resulting in a combination of preference resistance and learning intransigence.

While the literature suggests age may not be related to conflict style, there is some evidence that the youngest and oldest adults may have some resistance to acquiring new information and learning new skills. This resistance to learning may inform on whether

the youngest and oldest adults would be willing and able to learn, accept and utilize the new conflict competency skills and procedures necessary to manifest conflict style change.

Conflict Competence Impacts on Conflict Style

Lederach (1995) contrasted an elicitive approach to conflict with a prescriptive approach. The prescriptive approach assumes a model or process for conflict resolution that can exist superiorly to context and that this collection of skills can be learned and practiced by those involved in conflict. Lederach's elicitive approach recognizes the necessity of understanding context and adapting the conflict resolution approach to both understanding and meeting the specific needs of a given context. Combining the elicitive and prescriptive approaches provides both the practical tools and skills for conflict resolution with a context awareness that can help define the appropriate usage of each tool. "Learning to see yourself seeing and understand how you filter information through your own cognitive, experiential, and cultural lenses is a powerful tool in life, learning, and conflict analysis and intervention." (Rothman, 2014, p. 112)

"Conflict Intelligence as an overarching set of competencies that enable one to manage or navigate different types of normative conflicts in distinct settings constructively and effectively." (Coleman, 2018, p. 16) Parties who come to a conflict situation with conflict management skills, or who can be educated as part of a conflict situation, are likely to be more proficient in resolving those conflicts and arriving at appropriate resolutions and agreements (Ramarajan, Bezrukova, Jehn, Euwema, & Kop, 2004; Waithaka, Moore-Austin, & Gitimu, 2015). Training in communication,

negotiation tactics, and CI and EI awareness results in materially improved conflict outcomes, more amicable post-conflict relationships, and an improved feeling of control for the parties (Fetherston, 1994; Waithaka, Moore-Austin, & Gitimu, 2015; Wall & Druckman, 2002). Conflict competency skills can also reduce both negative and egocentric responses, both of which can lead to escalation, including violence, and a loss of focus on process and objectives (Ramarajan at el, 2004).

The use of violence as a response to conflict is a learned behavior, and providing education that identifies alternatives to violence as a response to conflict can help prevent violence (Eron, Gentry, & Schlegel, 1994). Under the assumption that conflict is common and inevitable, but is only destructive if handled inappropriately (Waithaka, Moore-Austin, & Gitimu, 2015), conflict resolution strategies, processes, and skills, collectively conflict competence skills, allow for the resolution of conflict without resorting to violence (Breunlin, et al., 2002).

Reflexivity, the exercise of examining one's own position and perspective in a given context, is a valuable skill for those engaging in the resolution and management of conflict. Recognizing one's own feelings and habits of behavior in cooperation with a more practical and neutral analysis of a context provides the necessary balance for practical, yet compassionate and caring engagement in productive conflict outcomes (Lane-Garon 1998). Reflexivity is a principal conflict competency in tactical conflict resolution processes and managing bias and negative habitual response behavior (Vindeløv, 2012; Astor, 2007; Rothman, 2014). Coleman and Lim (2001) postulated a framework that provided necessary individual competencies for conflict resolution that

include understanding and change to how people think about, frame and react to conflict situations. The unifying understanding is that a significant component of conflict competence is the individual ability to recognize and understand their own perceptions and beliefs, and cognitively make the necessary adjustments to be effective in managing conflict in a given context. Thus, a key component of conflict competence is the acquisition and use of tools that deal with the reality of a given situation, rather than having parties engage based on assumptions and preconceptions. “If you assume that all parties in a conflict have a valid viewpoint, you can search for ways to combine perspectives and create collaborative resolutions.” (Conerly & Tripathi, 2004, p. 16)

Garaigordobil & Martínez-Valderrey’s study demonstrated that education and practical training in conflict resolution strategies, focused on anti-bullying, provided evidence of “increased capacity for conflict resolution” (2015, p. 230) and an increase in participant self-esteem, leading to a conclusion that conflict handling skills and modified habitual conflict behavior can help prevent violence. Brockman et al. (2010) found that conflict management styles changed over a three year period as a result of participation in conflict resolution workshops for a group of graduate students. Both of these studies suggest that a Cognitivist learning opportunity can participate in a conflict style change.

Education in, and practiced use of, conflict competency skills help modify conflict handling choices, effectively helping move those who acquire these skills to a new approach for dealing with conflict. The literature appears to support the supposition that conflict competency training can change conflict style.

Benefits of Organizational Conflict Style Evaluation

The impacts of organizational conflict skills training have been studied and have demonstrated improvements in conflict resolution agreements, reduced violence, and improvements in morale. Conflict skills trainings have also shown significant effects on conflict participants' collaborative negotiation behaviors, thoughts, feelings, attitudes, outcomes, and work climate (Coleman & Lim, 2001). "[M]ost recommendations relating to organizational conflict still fall within the spectrum of conflict reduction, resolution, or minimization." (Rahim, 2002, p. 206) While this helps reduce and remove conflict in organizations it does not harness the inherent divergence of interests to expand understanding, be creative and move to new paradigms. Allowing parties to operate within conflict, utilizing conflict competency tools, and garner benefit from those experiences could be a significant positive addition to conflict management for many organizations (Hayes, 2008; Runde & Flanagan, 2012).

Individuals with positive conflict handling behavior are also perceived to have better problem-solving skills, better communication skills, to be more capable of achieving objectives, of maintaining more positive relationships and of fostering team cohesiveness. Organizations value all of these skills in their leaders. Those without positive conflict handling behaviors are less satisfied with their jobs and are less likely to be successful in organizations (Gross and Guerrero, 2000, p. 201).

Contrary to study expectations of senior management exhibiting competitive conflict handling behavior, Brewer et al. (2009) found that managers make cognitive selection of contextually appropriate conflict behavior that tends to be overall more

integrative. Their explanation for this is that repetitive exposure to similar conflict situations, with a continuously present imperative and expectation of finding productive resolution to conflict, conditions managers to identify and utilize tactics that are collaborative and encourage cooperative, creative problem solving. Training that encourages this type of repetitive exposure should include opportunities to practice conflict competency skills and work with conflict resolution processes. Experiential learning helps connect theory to practice and promotes a more nuanced understanding of conflict resolution and complexity (Romano, Hirsch, & Paczynska, 2017, p. 255).

Glessner observed non-trained individuals were likely to be inconsistent in handling conflict situations and encountered more conflict, while staff and managers trained in conflict competency skills, such as mediation and problem solving, “recognize and resolve differences” more effectively and have enhanced relationships with coworkers (2000, p. 116). Methodology and process can replace unstructured conflict behavior with processes for gathering, presenting, evaluating and prioritizing problem solving. By establishing boundaries that suggest acceptable participant behavior a context is created that identifies different interests (positive conflict) while simultaneously minimizing escalation and bias (negative conflict), through agreed upon process that addresses the need to give voice to varying perspectives and mechanisms to allow for improving communication, reframing positional perspectives, and shared decision making (Benjamin et al., 2002, p. 260).

Positive Conflict Outcomes

Conflict is a necessary aspect of the identification of problems, challenges and opportunities; and the appropriate handling of conflict can leverage value from differing perspectives to more effectively and creatively resolve conflict. (Fisher, 1994; Thomas & Kilman, 2008, Waithaka, Moore-Austin & Gitimu, 2015) Poorly managed conflict in an organization can lead to individual health and well-being issues including long-term psychosomatic complaints, bulling and burnout (Carsten, Dirk Van, & Dijkstra, 2004; Georgakopoulos & Kelly, 2017). Organizations that avoid conflict or seek ways to eliminate conflict will forego the opportunities presented by conflict for early identification of problems and creative resolutions to those problems (Fisher, 1994). Positive conflict outcomes occur when individuals who find themselves in conflict can harness that energy to learn, grow, understand one another better, build stronger relationships and find ways to solve problems and generate change together (Coleman, 2018; Stevahn, 2004).

Individuals and teams that have generally conflict free relationships can thrive on task-oriented conflict where effectively handled dual concern discussions help raise awareness of perceptual bias, inform on necessary learning, and improve team decision making (Carsten, Dirk Van, & Dijkstra, 2004, p. 9). Christina Merchant, as told to Costantino (2015, p. 131), advocates for: appropriately creating or raising the tension in conflict situations because “tension creates energy, dissonance, imbalance, and opportunity, which might be exactly what the organization or individual needs to think or act in a new way or form a fresh mental model.”

Benefitting from positive conflict in an organization does not appear to be an exercise of awareness and accommodation of different individual conflict styles. Instead, the research suggests that it is an environment, framework and process that encourages, and assists individuals to change their conflict style to a more uniformly consistent state that accepts, benefits from and promotes positive conflict.

Personality Traits and Organizational Conflict

Personality Type

Personality Type is an unchanging collection of traits exhibited by individuals that is based on temperament and patterns of cognition (Ardelt, 2000; Costa & McCrae, 1994; John, Robins, & Pervin, 2008; Wilks, 2009). Personality type measures individual preference across a number of dimensions. “These preferences are innate and even though they can be influenced by the environment, they are reliably consistent across time.” (Myers, 1987) “There is long term stability in personality” and the consensus of the research considers temperament, or personality type, to be an unchanging characteristic of an individual (Graziano, 2003, p. 894). In developmental psychology, temperament, refers to “early appearing, stable, individual differences presumed to derive from the constitutional or biologically determined makeup” (Graziano, 2003, p. 896).

“There is no reason to assume, of course, that personality development ceases in young adulthood, or that it does not continue throughout the life span.” (Laursen, et al., 2002) However, much of the literature on organizational conflict related training still leans toward “including individual characteristics or predispositions in comprehensive models of organizational conflict.” (Baron, 1989, p. 281). Certain personality types are

more or less likely to be involved in conflict in an organization; and understanding the personality type propensities of one's self and others is still a widely accepted approach to managing conflict at work.

However, advances in research technique and human response measurement have allowed for the observation of significant measurable change in what was once thought to be personality trait expression. Long standing understanding of latent state-trait (LST) theory is moving toward a revised LST theory, LST-R, where, what was once thought to be traits are more accurately viewed as temporal and context sensitive states (Steyer et al., 2015). This suggests that observed relationships between personality type and conflict style may be situationally bounded.

Organizational Use of Personality Type

Despite LST-R advances, much organizational training is still based on the concept that people are what and who they are, and that cannot be changed (Antonioni, 1998, Baron, 1989; Carretta et al., 2012; LeBlanc, 2009; Park & Antonioni, 2007). Personality type as a predictor of individual outcomes in organizational situations is considered to be well established, with certain personality sub-types having been correlated to successful performance in a variety of studies including a meta-analysis study by Barrick and Mount (1991) as cited by Carretta, Ree, & Teachout (2012, p. 81). This perspective then dictates that individuals need to be acutely aware of their own personality type and the resulting tendencies, strengths and weaknesses their personality type will impose on their ability to interact with others, participate on teams and deal with conflict.

Organizational management and Human Resource ("HR") personnel spend up to 60% of their time dealing with interpersonal conflict that has the potential to create dysfunctional and less than optimally productive workplaces (Darling & Walker, 2001; Cloke & Goldsmith, 2011; Kohlrieser, 2007; Jensen-Campbell & Graziano, 2005; Lattuch & Young, 2011; Spicer, 2011; Thomas & White, 2011). Providing training to employees in the areas of conflict handling skills, understanding conflict styles and recognizing personality types is thought to improve an organization's capability to deal with conflict more productively (Ramarajan et al., 2004; Fetherston, 1994; Wall & Druckman, 2002; Katz & Sosa, 2015). As a result, there is significant organizational impetus to identify metrics, tools and training mechanisms that can improve individual capability to deal with conflict, avoiding the direct cost imposed by the conflict, e.g. lost time, reduced productivity, as well as the impact on those ancillary functions, such as HR, when problems escalate.

Research has recommended the inclusion of personality type as a significant consideration when selecting team members, and assigning roles and responsibilities (Bradley & Hebert, 1997, p. 11). Areas of individual behavioral deficiency can be targeted for training and remediation based on personality type determination (Driskell et al., 2006, p. 266). Organizations can improve assessment of personality type, and thus personnel assignment, capability and training requirements by finding ways to effectively assess personality type that is not exclusively performed by self-reported assessment (Driskell et al., 2006, p. 266).

Personality Type and Conflict Style

Previous studies have established that there is a relationship between personality type and conflict style (Chalkidou, 2011; Marion, 1995; Thomas & Kilmann, 1974; Wang, 2010; Wood & Bell, 2008). However, these studies have all used a variety of different instruments to measure both personality type dimensions and conflict style. The specific correlations in each study were limited to various subsets of personality type with specific conflict styles. There is no universally accepted model or analysis demonstrating a statistically significant relationship between all aspects of personality type and conflict style. However, historically, there has been considered sufficient evidence that measuring personality type is a predictor of conflict style for many to link the two concepts as valid for the purpose of establishing organizational training programs and guidelines.

More recent studies, focusing on the lack of significant statistical relationships between personality type and conflict style, are contributing to a disassociation between the concept of an unchanging personality type and a more malleable, evolving concept of conflict style. In a study of US military special operations personnel, a group that on many levels could be considered very similar, and whose selection is based on demonstrations of competitive and collaborative tendencies, “findings [only] demonstrated statistically significant relationships between sensing-intuition and thinking-feeling personality types with avoiding and accommodating conflict management styles respectively.” (Uhing & Holland, 2016). Uhing & Holland (2016) go on to say that they found no other significant relationships between other personality

types and conflict styles, especially in the dominantly established conflict styles of the study group. Whitworth, similarly, did not find expected significant relationships between registered nurses personality types and conflict style (2008, p. 921).

While the evidence that personality type does not predict conflict style is mounting, there has been little practical movement away from an assumption that personality type and conflict style are fixed traits of an individual. Many organizations who make use of personality type and conflict style assessment, perform these assessments only one time, implicitly or explicitly adopting the assumption that neither will change for an individual. A one-time assessment of personality type and conflict style, and any assumption of a fixed relationship between the two as a determinant of individual capability, performance, conflict management behavior, and organizational role suitability may be inappropriate.

Organizational Use of Conflict Style

Studies of customer support representatives have found that organizational testing to determine conflict style as a measure of pre-hire role suitability and as an indicator of the need for conflict resolution technique training in post-hire individuals can be a valuable metric (Wade, 2007). Gross & Guerrero (2000) go further to conclude that conflict styles can be ranked in terms of their appropriateness and suitability in organizational settings. Their conflict style ranking, best/most beneficial to worst/least appropriate, indicates that organizations should be looking for individuals who demonstrate a collaborative style, with each of the following styles as less desirable in descending order: compromising, competing, accommodating, and avoiding (Gross &

Guerrero, 2000; p. 224). Much of the historical research reflected in organizational training concludes that: a) conflict style is something that people "have". b) It may be possible to alter someone's conflict style situationally with sufficient self-awareness and cognitive intervention. c) conflict style is a trait, that will need constant monitoring and corrective behavioral change to ensure that lesser appropriate conflict styles do not interfere with appropriate actions in organizational settings (Conerly & Tripathi, 2004, p. 20).

At the October 2018 Association of Conflict Resolution Annual Conference a model for training healthcare professionals advocated using a MODE like assessment to determine a level of Cooperativeness (Sparks, 2018). The underlying assessment model uses designations of High Cooperation, No Cooperation, Conditional Cooperation, and Illusion of Cooperation in a manner similar to the TKI assessment approach (Steinberg & Whiteside, 2005). Notable about this training framework is that the presenters recommend personal understanding of one's own Cooperative designation, and that of others, as a basis for selecting skills and processes for engaging in conflict situations. Essentially, this contemporary example of organizational training uses an assessment tool to label individuals and then uses those labels to prescribe conflict handling behavior. In organizational training, conflict style is still broadly considered to be a fixed trait that can be measured, identified and used to label an individual. It is something that only needs to be assessed once. Once labels are assigned then sub-sets of conflict handling skills and training are deemed appropriate using a matrix of cross tabulated labels. This has the, perhaps unintended, consequence of limiting training and available conflict competency

understanding to only those skills deemed appropriate for a given label. This helps to create and sustain a perception that individuals are something that is unchanging.

Dr. Ralph H. Kilmann, one of the original creators of the TKI, himself recognizes that Context is important when assessing conflict style. In his consulting practice Dr. Kilmann recommends participants take the TKI assessment two times: the first time with instructions to focus on managing differences within work groups, and the second with a focus on situations outside of work groups (Kilmann, n.d.). By changing instructions, and thus participant perspective and context, conflict style assessment is expected to vary by time and circumstance for individual participants.

Organizational Change to Raise Conflict Competence

Organizations have a vested interest in helping members improve conflict competency skills and move to a conflict style that reflects the objectives and expectations of the organization. An individual's "conflict management style will reflect the extent to which he or she feels protected from arbitrary actions by his or her boss." (Brewer & Lam, 2009, p. 9) If organizations can identify which conflict style(s) are most beneficial and productive in their environments, and can help members build the skills and understand the processes necessary to move to those conflict styles, then everyone begins speaking the same language, expectations align and individuals feel comfortable and safe within the organization. Having a tool such as the TKI and using it properly to assess temporal, contextual conflict style can help organizations identify situations that are stressful, unhealthy, unsatisfying and unpleasant. Avoiding and accommodating conflict styles are "negatively related to health because the conflict either lingers on (and

thus stress continues to exist) or is settled […] with negative consequences for self-esteem and self-efficacy" (Carsten, Dirk Van, & Dijkstra, 2004, p. 15). Knowing this, for example, can be used to help create a training, evaluation and a work environment that facilitates individual conflict style change that is considered more positive by the organization.

Changing conflict style does not appear to be the result of Behaviorist, Cognitivist or Constructivist learning alone. An understanding of conflict competency skills and processes, the cognitive, combined with the ability to observe that an approach works, and is right, is a start. Organizations must also strive for reflexivity in their approach to dealing with conflict. A collection of cause and affect, with appropriate feedback, that combines knowledge and modelled behavior with social (organizational) expectation and feedback may be able to construct a learning framework that can reliably produce beneficial conflict style change. "Reflexivity is not to be confused with a knee-jerk reflex response. Its use in the social sciences is quite the opposite" (Rothman, 2014, p. 111). Rothman then references Fredrick Steir to describe two types of reflexivity: the first, a conditioned or habituated response; the second, a long cycle, where behavior response is delayed, considered and filtered by cognitive understanding, social necessity, and situational appropriateness. This second, long cycle, type of reflexivity is what organizations want to foster in conflict situations.

Organizations that choose to avoid conflict must possess the ability to identify and understand sources of conflict in order to deal with issues before they escalate (Kolb and Silbey 1990). In contrast, organizations that implement dispute resolution systems with a

focus on formal structured conflict resolution mechanisms such as mediation, collective bargaining, and grievance systems overlook the opportunities to manage conflict afforded through individual acquisition of conflict competency skills (Liu, Inlow & Feng, 2014, p. 159). “Organizational conflict must not necessarily be reduced, suppressed, or eliminated, but managed to enhance organization learning and effectiveness.” (Rahim, 2002, p. 229)

Summary and Conclusions

Waithaka, Moore-Austin & Gitimu, (2015, p. 11) conducted a study with a much smaller participant population, similar in approach to this study, that included a pre-training and post-training TKI assessment. They observed that after conflict handling training there was no statistically significant difference in conflict style. Waithaka et al. were surprised at their results, expecting there to be a significant result supporting conflict style change. They theorized that an opportunity to practice and apply new conflict handling skills should be included in any training, and that the period of time between assessments should be sufficiently long to allow participants to process and integrate the training materials. However, their results are inconsistent with most other related research. Much of the contemporary research aligns with Waithaka et al.’s expectations and supports the concept the conflict style can be both situational and can evolve for individuals over time, with training and experience (Brewer & Lam, 2009; Brockman et al. 2010; Callanan et al., 2006; Berens, 2018, Coleman, 2018, Gonçalves et al. 2016; Vestal, 2011; Croucher et al., 2012;Waithaka et al., 2015; Ziemer, 2014). This study also examined TKI before-and-after assessments, but with both a much larger study population, and included cases with a much longer period of time between the two

assessments, providing an opportunity to retest Waithaka et al.'s results on a larger dataset. This study's results were much more consistent with Waithaka et al.'s expected outcomes, than were their study results.

Organizations who recognize that effectively managing conflict includes setting expectations and providing training that gives the knowledge and tools they need to personally become better at handling conflict (Rahim, 2002). Positive conflict can only be achieved in an environment that encourages and promotes practical skills training for everyone. Individuals untrained in conflict competency skills exhibit inconsistent conflict handling behavior (Glessner, 2000), however, the expectation and exercise of conflict competency skills can produce more consistent and positive conflict outcomes (Benjamin et al., 2002). "[I]ndividual learning is a necessary but not adequate condition for organizational learning" (Rahim, 2002, p. 212) Knowledge gained by individuals must be documented and communicated throughout and organization, and the organizational support for conflict management must both preserve and provide access to this conflict knowledge to everyone in the organization. Organizations must provide support for understanding, interpreting, documenting and sharing knowledge about conflict if they are to be successful at managing conflict (Rahim, 2002, p. 212). In the end, organizations provide the support infrastructure, but individuals must learn the skills and processes to utilize those tools. Organizations should strive to encourage positive conflict while ensuring that process and organizational structure supports continuous learning of conflict competency tools so that individuals own the capacity to manage conflict while benefiting from it (Rahim, 2002).

Conflict style has been shown in some of the research to be circumstantially related to Emotional Intelligence, Cultural Intelligence and Personality Type. But even the observed relationships only temporally, and within specific context, show relationships to some of the aspects of conflict style (Basogul & Özgür, 2016; Bell & Song, 2005; Chalkidou, 2011; Marion, 1995; Thomas & Kilmann, 1974; Wang, 2010; Wood & Bell, 2008). However, studies measuring conflict outcomes suggests that learned Conflict Intelligence, conflict competencies, and communication skills improve outcome success (Ramarajan, et al., 2004; Coleman, 2018). This infers that the exhibited behavior necessary for successful conflict outcomes is informed by what individuals learn about conflict, conflict management and conflict resolution.

Three theories of learning, Behaviorist Learning Theory, Cognitive Learning Theory, and Constructivist Learning Theory provide insight into how individuals acquire, interpret, and operationalize knowledge. Each provides perspective and dimension to the discussion of the impact of knowledge on conflict handling behavior. Organizational understanding of conflict, and the frameworks used to help individuals become better at handling conflict can only benefit from any expanded understanding of how to measure, perceive, and report on individual conflict handling proficiency.

Conflict competency, as measured by conflict style assessment, is an exercise in learning, practice and iterative improvement. Conflict style is expressed through observed conflict handling behavior, and there is growing consensus that this behavior can be influenced by training. This study hopes to contribute to that consensus and raise awareness within organizations that conflict style is not used to its full potential when

only measured one time, and used as a label. Rather, repeated assessment of conflict style can be a measure that helps evaluate and gauge progress as individuals become better able to handle conflict within organizations through training, practice and improved conflict competency skills.

Chapter 3: Research Method

Introduction

This chapter explains the rationale, methodology, how the study archival data was acquired, operationalization of the data variables and the procedures for conducting analysis of the data to explore notable statistical relationships to be used in assessing the research questions and study hypotheses. The purpose of this study is to examine whether conflict style can change over time, based on contextual circumstances. By demonstrating that conflict style can change, the use of a conflict style as a label monolithically describing an individuals' approach to conflict is no longer valid. Quantitatively demonstrating that assessed conflict style can change, through various mechanisms, establishes a new base assumption for organizational training and conflict management. Providing the correct education and practice opportunity allows an organization to effectively raise the bar in terms of conflict competence capabilities beyond simple acknowledgement and accommodation of individual personality type and temporally static conflict style assessment. Knowing that conflict style can change allows organizational training frameworks to facilitate more homogenous individual conflict styles that support and are supported by, the organization.

This study subscribes to a Correlational Methodology, investigating archival data, gathered by other research and for a variety of other assessment purposes. Independent variables were not directly manipulated, but analyzed, using standard quantitative analysis, and examined for statistically significant relationships to the dependent variable (conflict style change). A common instrument, TKI, across all measurements has created

a high reliability dataset. This reliability, along with the objectivity and removal of bias inherent in utilizing a data set independently (of this study) gathered, achieves two key components of a study subscribing to a Postpositivist paradigm approach. The other two key components, internal and external validity are addressed below.

The TKI instrument is unique, in that it has been adopted for use widely in organizational and educational environments as an evaluative tool in identifying conflict style for a variety of purposes. Further, Consulting Psychologists Press, Inc. ("CPP"), the copyright holders of the instrument, has tightly regulated its use. (Walker, 2005; Uhing & Holland, 2016; Shell, 2001) Because of this circumstance, the TKI instrument has been administered many times in many contexts, and virtually all studies using the TKI instrument have been administered in such a way that the raw and processed survey data is acquired and administered by CPP. Virtually all TKI data generated in the past 20 years has been consistently processed, uniformly recorded and stored, and been made available to this study in both very large representative quantity and with individual records that are of very high quality and reliability.

The Research Design and Rationale section below discusses the variables operationalized for this study and how the selection of the variables was driven by the research objectives. This section also discusses how the quantitative analysis of conflict style change was measured. The Methodology and Sampling sections will address the study participant population, the representative target population and working assumptions regarding potential population bias. The study dataset represents very large samples spanning almost two decades. The implications and benefits of using such a

large sample size of TKI data are discussed. A review of the acquisition procedures for the archival data and the grant of permission for use in this study is followed by a review of the reliability and validity of the TKI Instrument and a discussion of how the instrument is one of the principal tools used in the assessment and calculation of conflict style in conflict resolution research.

Research Design and Rationale

The TKI instrument pre-survey profile gathers a wide variety of data from the participants. For a full list of variables collected see Appendix E. This study makes use of the self-identified age, highest level of education completed, current work level, reason for assessment, and time between assessments of the included participants; all of whom were assessed using TKI two times (first and second assessment). The conflict style of a participant was calculated, using a proprietary CPP algorithm, which generates a percentage value for each of the possible conflict styles (competing, collaborating, compromising, avoiding, and accommodating); the conflict style with the highest percentage is the participant's calculated conflict style, also referred to as the preferred conflict style or primary conflict style. The dependent variable is a representation of whether conflict style changed between the first and second assessment.

In order to evaluate each hypothesis, tests of significant change to the dependent variable were assessed across the collection of independent variable values and combinations of independent variable influences. If no statistical significance was identified for each hypothesis, then the null hypothesis for the bounded set of independent variables being tested was held to be true and suggested that no relationship

between the tested independent variables and the dependent variable was deemed to exist for the purpose of this study (Babbie, 2013, p. 48). Where the independent variables being analyzed for each hypothesis demonstrate a statistically significant variation in the dependent variable, that hypothesis was confirmed for the purpose of this study.

Hypotheses

The following hypotheses were tested for statistical significance:

$H1_0$ (null hypothesis): There is no significant difference in conflict style between the first and second assessment.

$H1_a$ (alternative hypothesis): There is a significant difference in conflict style between the first and second assessment.

The alternative hypothesis for H1 looks to Cognitive Theory, which suggests that new information and formal education may have a material impact on behavior. If an individual receives new information regarding conflict, how one chooses to manage conflict may change. Constructivist Theory is also a contributor when considering the possible impact on conflict style by an organization's culture and expectations. How one manages conflict in an organization may be influenced by social pressure, organization expectations, policy and training.

$H2_0$ (null hypothesis): There is no significant relationship between age and conflict style change.

$H2_a$ (alternative hypothesis): There is a significant relationship between age and conflict style change.

The alternative hypothesis for H2 looks to Behaviorist Theory to explain how behavior can change as experiential learning expands, over time, to include a broader range of situations, consequences and other people. If no other learning directly related to conflict takes place, individuals will still see a variety of approaches, in an ever-growing collection of circumstances, for how others deal with conflict. Behaviorist Theory tells us that repeated exposure to successful, or better, outcomes will result in modified behavior. It suggests that as individuals accumulate new life experiences, they may change their approach to conflict as they discover new approaches that are better than outcomes from previous behavior. If this then changes their behavior, it may be a sufficiently large change to translate to a change in measured conflict style.

$H3_0$ (null hypothesis): There is no significant relationship between work level and conflict style change.

$H3_a$ (alternative hypothesis): There is a significant relationship between work level and conflict style change.

What is notable about work level, is that to be successful and obtain promotion, an individual must acquire information essential to an organization, and demonstrate some mastery and consistent use of this new information. If an organization values skill that reflects on conflict management, then training will provide skill information to individuals, and organizational feedback and evaluation will reinforce compliance with organizational expectation. Constructivist Theory thus reflects on the alternate hypothesis for H3, supporting the idea that there is a modification of behavior through a combination of training, organizational expectation, and feedback. By providing information and

expecting and measuring resulting conflict behavior, organizations may contribute to sufficient change in conflict-related behavior, resulting in individual conflict style change.

$H4_0$ (null hypothesis): There is no significant relationship between education level and conflict style change.

$H4_a$ (alternative hypothesis): There is a significant relationship between education level and conflict style change.

Cognitive Theory supports the concept that the human brain can acquire new information and then utilize it to inform understanding sufficiently to impact behavior. Education level is not related to conflict learning specifically. However, the increased exercise of cognitive learning may help individuals be more accepting of conflict-related information, and thus potentially more open to behavioral change resulting from the simple acquisition of new learnings.

$H5_0$ (null hypothesis): There is no significant relationship between reason for assessment and conflict style change.

$H5_a$ (alternative hypothesis): There is a significant relationship between reason for assessment and conflict style change.

The various studies which contributed data that was used in this study may have asked participants to identify the over arcing reason why they were participating in the study, and by implication why they were taking the TKI assessment. Constructivist Theory suggests that circumstance may lead to behavior change. Behavior change concerning conflict handling may be sufficient to result in conflict style change.

$H6_0$ (null hypothesis): There is no significant relationship between time between assessments and conflict style change.

$H6_a$ (alternative hypothesis): There is a significant relationship between time between assessments and conflict style change.

Both Behaviorist and Constructivist Theory suggest that there is a learned behavior reinforced with repetition, opportunity to practice new behavior and feedback. An increased duration between assessments may provide more opportunity for individuals to practice, refine and adopt behavior changes based on learnings. A greater opportunity to exercise, evaluate and refine learned conflict behavior may manifest in individual changes in conflict style.

Methodology

Design. In general, survey results analyzed for notable significant relationships amongst the gathered variables using standardized statistical tools to provide quantitative results is an appropriate and viable methodology design for the study of characteristics of a population of people (Babbie, 2013; Creswell, 2009). The TKI survey instrument has been widely used to gather conflict style data on various populations and has been demonstrated as a viable mechanism (see discussion of Viability below) for gathering data to make inferences about large target populations based on statistically valid sample sizes (Fowler, 2013; Thomas & Kilmann, 1978).

In the case of this study the selection of the sample data was done from the larger sampled TKI data, filtered and randomized by computer selection. CPP maintains a database of all TKI survey results administered with permission of the instrument

copyright holder, going back almost three decades. From the undisclosed total number of surveys, this study was provided with a random subset of TKI result records to be used as a sample population representative of the study's target population.

Data Analysis Procedures were broken down into 5 major phases:

1. Load and scrub CPP data. The original data files provided by CPP in comma separated flat file format were imported into SQL Server. Conditional SQL SELECT queries were executed to validate imported data and data structure formatting.
2. Data from participants who were not 18 years old at the time of they took the TKI survey (age < 18) and data that did not contain a valid calculated conflict style were rejected and removed from the study data.
3. Frequency reports on counts and percentages for each of the independent variable values were calculated.
4. First assessment conflict style was compared to second assessment conflict style using SPSS binomial logistic regression analysis across all data records to determine significance related to hypothesis H1.
5. Dataset was partitioned by each individual independent variable category, and binomial logistic regression analyses were run using SPSS on each partition to determine significance related to hypotheses.

A detailed specification of the SQL and SPSS commands used to manage and analyze study data was chronicled in Appendix F.

Sampling and Sampling Procedures

The target population of this study is English speaking American adults. The sample population therefore included individuals 18 years and older, who have identified their country of residence at the time of their participation in the English language TKI survey as the United States.

This study is using data acquired from a large number of other studies using a variety of sampling procedures specific to those study requirements. This study sought to acquire as large a sample dataset as possible of TKI survey results, with the selection or filtering criteria for this data to be consistent with participants representative of the target population.

Probability theory tells us that as the size of a study sample population increases the standard error decreases, which means that the sample data will tend to cluster nearer to the true value as the sample size becomes larger (Babbie 2002, p.203). This study's sample population (11,281), does not approach 5% (15+ million) of the US adult population (*N*), as a result it is not necessary to apply a finite population correction. Using standard, accepted probability theory calculations an *n* of this size produced a confidence level in excess of 99%, or a sampling error of less than 0.001.

Statistical Analysis Selection

A binomial logistic regression analysis was used to analyze the study data. The primary analysis of interest for this study was the examination of first assessment calculate conflict style compared to the second assessment calculated conflict style, to determine if any significant change in conflict style occurred. Further, the independent

variables were analyzed to identify if they were significantly related to any observed change in conflict style.

The study analysis examined whether conflict style changed under various combinations of independent variables. Because the outcome, or dependent variable was essentially a yes or no answer to the question: “did conflict style change?” it was represented as a dichotomous, or binary value, consistent with the requirements for binomial logistic regression analysis. Independent variables used in binomial logistic regression analysis must be continuous or categorical (Laerd Statistics, 2018). Each of the study independent variables was represented as categorical variables.

Variable Representation

The dependent variable is a representation of whether conflict style changed between the first and second assessment. Depending on the analysis being performed, the dependent variable may be displayed as a first/second string, e.g. compromising/collaborating, or as a dichotomous dummy variable, e.g. compromising/collaborating means conflict style changed first-to-second, and would be represented by “1” (meaning true); compromising/compromising indicates no change first-to-second and would be represented as “0” (meaning false). The dummy variable (ConflictStyleChanged) was calculated for each participant record: ConflictStyleChanged=0 if the first assessment conflict style was the same as the second conflict; ConflictStyleChanged=1 if the first assessed conflict style was not the same as the second conflict style.

Each of the independent variables are represented as categorical variables. The following table (Table 1) identifies the sub-category segmentation of the sample data for each of the independent variables.

Table 1

Independent Variable Participant Counts by Sub-Category

Independent Variable	Value	Description	Participant Count
Time Between Assessments			
	0	Same Day	1725
	1	Less than 1 week	1515
	2	Less than 1 month	1201
	3	Less than 6 months	1743
	4	Less than 1 year	1275
	5	Less than 2 years	1661
	6	More than 2 years	2701
Reason for Assessment			
	0	Not identified	2928
	1	Training	6811
	2	Employment testing	56
	3	Career	120
	4	Education	984
	5	Personal Growth	922
Age			
	0	Not identified	2438
	1	18-25	679
	2	26-35	2724
	3	36-45	2885
	4	46-55	2263
	5	56-65	773
	6	66+	59
Work Level			
	0	Not identified	3741
	1	Entry-level employee	239
	2	Nonsupervisory employee	1647
	3	Supervisor	1465

	4	Manager	3770
	5	Executive	802
	6	Top executive	157
Education Level			
	0	Not identified	3715
	1	Some high school	28
	2	High school diploma / GED	419
	3	Trade/Technical training	125
	4	College - no degree	1029
	5	Associate/Community College	530
	6	Bachelors	3183
	7	Masters	2112
	8	Professional / Doctorate	680
First Assessed Conflict Style			
	1	Avoiding	2363
	2	Accommodating	1149
	3	Competing	1519
	4	Compromising	4780
	5	Collaborating	2010

Statistical Assumptions

For a binomial logistic regression analysis to be valid the seven following assumptions must hold true. When the assumptions hold true a binomial logistic regression will "(a) provide information on the accuracy of […] predictions; (b) test how well the regression model fits [the] data; (c) determine the variation in your dependent variable explained by [study] independent variables; and (d) [allow for the testing of] hypotheses on analysis regression equation." (Laerd Statistics, 2018)

Assumption #1: Dependent variable is dichotomous. The dummy ConflictStyleChanged variable was a two state binary (0 and 1) representation of whether conflict style changed.

Assumption #2: One or more independent variables are represented as categorical/nominal or continues values. Each of the independent variables in this study was represented by a value indicating a sub-category of that independent variable. For example work level was an independent variable and the sub-categories of work level are 0) Not Identified, 1) Entry-level employee, 2) Nonsupervisory Employee, 3) Supervisor, 4) Manager, 5) Executive, and 6) Top Executive.

Assumption #3: Data "should have independence of observations and the categories of the dichotomous dependent variable and all your nominal independent variables should be mutually exclusive and exhaustive." (Laerd Statistics, 2018) The study variables were neither dependent upon one another, nor were they related. Each was independently observable.

Assumption #4: A minimum participant or case sample size of fifteen (15). This study utilized a total sample size of 11,821, resulting in independent variable samples sizes well in excess of the minimum fifteen (15).

Assumption #5: Continuous independent variables need to demonstrate a linear relationship to the dependent variable logit transformation (Laerd Statistics, 2018). No study independent variables were continuous.

Assumption #6: Data must not show multicollinearity. Examination of Tolerance/VIF values and correlation coefficients will demonstrate a lack of multicollinearity amongst the independent variables (see Chapter 4).

Assumption #7: No significant outliers. All study variables were either dichotomous or categorical, establishing a fixed bounded set for each variable. Due to the nature of the bounded set variables, no outliers are present.

TKI Archival Data

A proposal was submitted to CPP (Appendix A) on March 3, 2017, with a request to provide:

> "[A]s large a data set as CPP can provide from TKI historical assessment data. The following preferences for filtering do not anticipate more than one dataset, but are merely preferences for which records to include assuming CPP can only provide a subset of available data. Filtering preferences: a) Include all records for those participants who did the assessment 2 or more times, matched on CUSTOMER_NUM, WEBUSER_ID, CLIENT_USER_ID_NUM, PERSONAL_ID, and/or EMAIL. b) Random records in descending order by DATE_UPDATED (or perhaps BATCH_NUMBER?) i.e. Preference for newer/more recent assessments. c) Of particular interest would be an equal number of records for each of the REASON_FOR_ASSESSMENT values." (see Appendix C)

On March 20, 2017, CPP provided approval for the data request (Appendix B), and the requested data sets. The dataset acquired from CPP for this study contained records for 11,821 participants who have taken the assessment more than one time. This study only examined TKI data from adult participants who were assessed in the U.S.

using survey materials in English. 199 records were eliminated that had a participant self-identified age of less than eighteen. Many of the demographic pre-assessment questions gathered from the original study participants are optional. This means that of the remaining data records, some did not contain valid data in fields representing one or more independent variables. The analysis performed for each hypothesis only utilized records containing valid, participant supplied, data fields pertaining to that analysis calculation. Actual sample size available to each calculation is summarized above in Table 1, and noted in the Results and Discussion sections.

Instrumentation and Operationalization of Constructs

Thomas-Kilmann Conflict MODE Instrument ("TKI") is designed to gather the results of 30 questions, each of which is a forced choice from options that represent one of the five possible conflict style designations (see previous discussion and definitions in Chapters 1 & 2). By forcing the participant to choose a preferred behavior in a collection of situations where each conflict style is paired with all other conflict styles, the survey results, through a simple arithmetic calculation, determine which mode represents the participant's preferential behavior, or preferred conflict style (Killmann & Thomas, 1978). This instrument does not measure participant situational behavior, only self-reported preference for behavior in various situations (Thomas, 1976).

The Copyright owner of the TKI, CPP, directly administered the assessment or provided standard guidelines under which the instrument was administered. CPP then gathered and stored all instrument response data, and performed a consistent set of

assessment calculations on all data. No data was provided by CPP as to the number or nature of the specific studies from which this study's data is derived.

The TKI was selected for this study for several reasons. First, the quantity of data available from CPP is unmatched by any other conflict style assessment instrument, Second, the historical administration and data collection of TKI results is highly consistent due to CPP's commercial management of the instrument's usage. Third, TKI has a demonstrated high test-retest reliability. Finally, TKI is designed to provide reliable participant conflict management intention differentiation.

Reliability Measurement: TKI's reliability measurement has been well established. With an average alpha coefficient of .60, TKI compares favorably when tested against the other three conflict instruments in common usage at the time of its creation (Kilmann & Thomas, 1977). All conflict style modes tested, excepting "accommodating", fall within the internal consistency moderate range.

Test-Retest Reliability: When compared to other conflict mode instruments, TKI has the highest test-retest reliability with an alpha coefficient of .64 compared to the Lawrence-Lorsch instrument (alpha coefficient of .50), the Blake-Mouton (alpha coefficient of .39), and the Hall instrument (alpha coefficient of .55) (Kilmann & Thomas (1977, p. 317).

Threats to Validity

The validity of conflict style Instrument research is based partially on a long history of use and a very high volume of available assessment data. TKI, and other similar instruments, is a self-assessment of a participant's perceived preferred response in

arbitrary fictitious conflict situations. Conflict style assessments do not capture the actual conflict behavior of participants. Because of this, in any given specific context, a participant's anticipated conflict handling behavior may not be reliably reproduced. There is a "lack of evidence that proves an individual's preferences have an effect upon their behavior when dealing with a specific type of conflict." (Kabanoff, 1987; Knapp, Putnam, & Davis, 1988; Volkema & Bergmann, 1995) However, in a more general way, unrelated to conflict style assessment, research has established a correlation between conflict handling behavior and individual conflict management strategy (Sorenson et al., 1999; Van de Vliert & Kabanoff, 1990); Van de Vliert & Euwema, 1994), i.e. people will generally react the way they expect themselves to react in situations that they have experience with or can readily relate to their real or imagined experiences.

Structural Validity. The structural validity of the TKI Assessment Instrument has been established as consistent across the measured conflict modes based on the uniform distribution of the individual mode selection options across the thirty questions on the survey and the opportunity for participant selection amongst each possible pair of mode values, demonstrating comparative preference as well as a cumulative preference for each possible mode value. "Due to the scoring method, the instrument is able to avoid the influence of perception and provides for an accurate measurement." (Kilmann & Thomas, 1977).

Ethical Procedures

This study uses archival data gathered, consolidated, and anonymized from a large number of other studies that administered the TKI for variety of reasons and with a

diverse set of objectives. All data was collected prior to the commencement of this study, using an instrument, TKI, that has been widely used for almost thirty years.

No individuals were asked to participate directly in this study. All data was derived from pre-existing studies that met both CPP's, and the respective study researcher's guidelines for participation, and any necessary research oversight requirements at the time of those studies. No personal identifying information was provided to this study as part of the dataset. In the original dataset provided to this study by CPP each data record was associated with exactly one TKI assessment. From the originally provided data, data consolidation was performed to created a single record for each participant. The derived participant records identified each participants' first and second assessed conflict style, along with the study relevant profile information. The original dataset had a participant "ID" number associated with each assessment record. This ID was used as the key for combining the first and second assessment data into a single record for each participant. The ID was a number generated by CPP as part of the dataset creation, and no identifying information was provided to this study that in any way allowed for the association of the ID to individually identifying data.

Nova Southeastern University Institutional Review Board ("IRB") determined that this study is exempt from further IRB review under 45 CFR 46.101(b) (Exempt 4: Use of previously-collected records, data, specimens, tissues, etc.). IRB Approval is documented in Appendix G.

Chapter 4: Results

Introduction

The principle objective of this study was to explore whether assessed conflict style can change, and to explore how age, work level, education level, reason for assessment and time between assessments (independent variables) may be related to any observed conflict style change (dependent variable). The selection of the study hypotheses are derived from the theoretical foundations of this study that suggest conflict style is a learned collection of perceptions and skills that is context based and is not an immutable trait that can be measured once and used to classify or label individuals forever.

Specifically, this study tested each of six (6) hypotheses (see Chapter 3 – Hypotheses), using standardized statistical analysis procedures. The following sections examine the various statistical analyses performed on the 11,821 participant data. A variety of calculations were utilized to examine the question of whether conflict style changes. Analyses were performed at several levels of increasing segmentation to reveal the subtleties inherent in the data relationships that are not apparent at higher levels of consolidated data analysis. The Descriptive Statistics section provides visualization of the dataset across the segmented sub-datasets to provide a breakdown of data description at the variable and variable subcategory level. Several SPSS statistical calculations were used to examine various dataset and sub-dataset relationships in the Inferential Statistics section. Results are summarized in the final section of this chapter.

Data Collection

This study uses a dataset comprised of 11,821 participants who took the TKI assessment two times. This dataset was extracted from a larger randomly selected dataset of 135,388 TKI assessments, comprised of 117,768 participants. The 11,821 participants that had a first and second assessment make up this study's population (*n*).

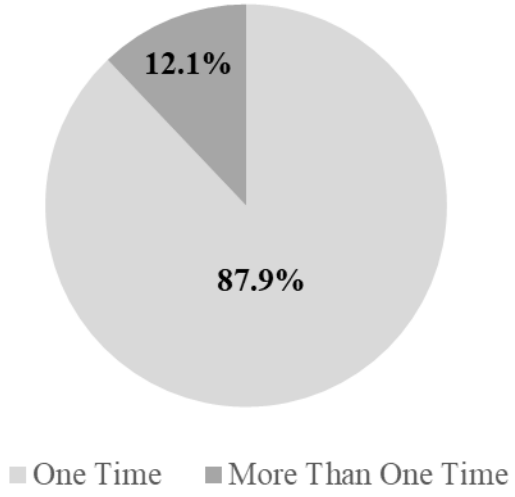

Figure 2. TKI Assessments One-Time (87.9%) vs. More Than One Time (12.1%).

Due to the size of the original dataset, there is a strong assumption of normal distribution in the sample population and indicates that only 12.1% of TKI assessment participants are ever re-assessed. Figure 2 shows the relative percentage of those participants who took the assessment one time versus those who took the assessment more than one time.

Descriptive Statistics

All participant data contained both a first and second assessed conflict style as an inclusion criterion for this study. The following frequency tables describe the study variables and variable sub-category designations.

Table 2

Conflict Style Frequency and Percentage of Sample Population

	Variable	Frequency	Percent	Cumulative Percent
Conflict Style Changed	No Change (0)	6357	53.8%	53.8%
	Changed (1)	5464	46.2%	100.0%
First Assessed conflict style	Avoiding	2363	20.0%	20.0%
	Accommodating	1149	9.7%	29.7%
	Competing	1519	12.9%	42.6%
	Compromising	4780	40.4%	83.0%
	Collaborating	2010	17.0%	100.0%
Second Assessed conflict style	Avoiding	2207	18.7%	18.7%
	Accommodating	1024	8.7%	27.3%
	Competing	1665	14.1%	41.4%
	Compromising	4712	39.9%	81.3%
	Collaborating	2213	18.7%	100.0%
Time Between Assessments	Same Day	1725	14.6%	14.6%
	Less than Week	1515	12.8%	27.4%
	Less than Month	1201	10.2%	37.6%
	Less than 6 Months	1743	14.7%	52.3%
	Less than 1 Year	1275	10.8%	63.1%
	Less than 2 Years	1661	14.1%	77.2%
	Over 2 Years	2701	22.8%	100.0%
Reason for Assessment	Not Identified	2928	24.8%	24.8%
	Training	6811	57.6%	82.4%
	Employment Testing	56	0.5%	82.9%
	Career Counseling	120	1.0%	83.9%
	Education	984	8.3%	92.2%
	Personal Growth	922	7.8%	100.0%
Age	Not Identified	2438	20.6%	20.6%
	18-25	679	5.7%	26.4%
	26-35	2724	23.0%	49.4%
	36-45	2885	24.4%	73.8%
	46-55	2263	19.1%	93.0%
	56-65	773	6.5%	99.5%
	66+	59	0.5%	100.0%
Work Level	Not Identified	3741	31.6%	31.6%
	Entry Level Employee	239	2.0%	33.7%
	Non-Supervisory Employee	1647	13.9%	47.6%
	Supervisor	1465	12.4%	60.0%
	Manager	3770	31.9%	91.9%

	Executive	802	6.8%	98.7%
	Top Executive	157	1.3%	100.0%
Education Level	Not Identified	3715	31.4%	31.4%
	Some High School	28	0.2%	31.7%
	High School Diploma / GED	419	3.5%	35.2%
	Trade / Technical Training	125	1.1%	36.3%
	Some College (No Degree)	1029	8.7%	45.0%
	Associate / Community College	530	4.5%	49.5%
	Bachelors Degree	3183	26.9%	76.4%
	Masters Degree	2112	17.9%	94.2%
	Professional / Doctorate	680	5.8%	100.0%
First-to-Second conflict style Change	No Change	6357	53.8%	53.8%
	Avoiding	1097	9.3%	63.1%
	Accommodating	630	5.3%	68.4%
	Competing	870	7.4%	75.7%
	Compromising	1659	14.0%	89.8%
	Collaborating	1208	10.2%	100.0%

Conflict Style Changed * Independent Variables. The following tables and charts provide a view of the independent variable sub-category frequency and percentage of sample population that did not change first-to-second assessment against any observed changes in the variable sub-categories.

Table 3

Conflict Style Changed * Time Between Assessments Crosstabulation

	Time Between Assessments							
Conflict Style Changed	Same Day	Less than Week	Less than Month	Less than 6 Months	Less than 1 Year	Less than 2 Years	Over 2 Years	Total
No Change	1216	898	609	944	635	834	1221	6357
Changed	509	617	592	799	640	827	1480	5464
Total	1725	1515	1201	1743	1275	1661	2701	11821

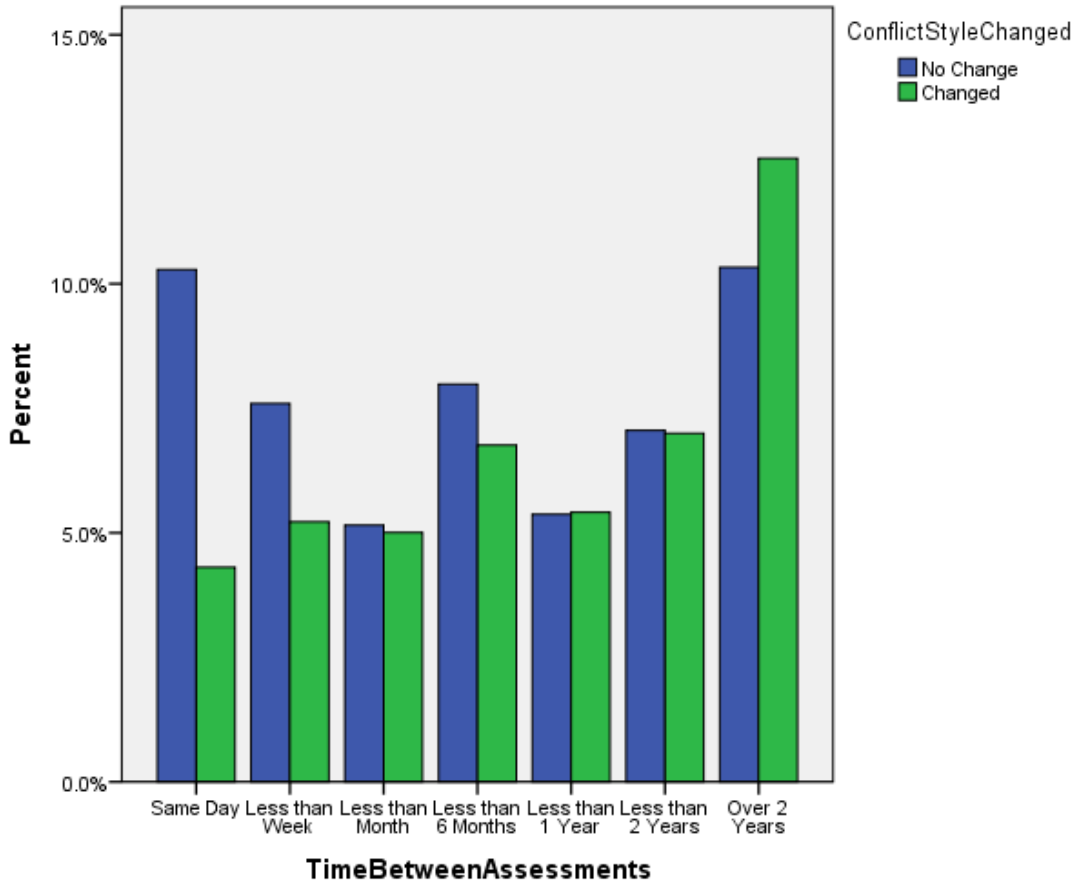

Figure 3. Conflict Style Changed * Time Between Assessments.

Observing Table 3 and Figure 3 it appears that conflict style is more likely to remain the same, ConflictStyleChanged = 0, if the TKI assessment is taken on the same day. However, the percentage of the population likely to change conflict style steadly increases as time between assessments increases. Overall, ConflictStyleChanged=1, appears to be a relatively large percentage of the population in all time between assessments timeframes, but grows over time. This observation may support the research that indicates a higher likelyhood of conflict style change resulting from conflict associated training when individuals are given the opportunity to absorb, utilize and practice learnings over longer periods of time (Waithaka, et al. 2015).

The following table and figure demonstrate the ConflictStyleChanged by participant count for each independent variable and variable sub-category. The ConflictStyleChanged % calculation is a percentage based on the Count and Total on each row.

Table 4

Independent Variable and Sub-Category by ConflictStyleChanged

		ConflictStyleChanged %		ConflictStyleChanged Count		
Independent Variable	Sub-Category	No Change	Changed	No Change	Changed	Total
Age	All	53.8%	46.2%	6357	5464	11821
	Not Identified	53.2%	46.8%	1298	1140	2438
	18-25	54.5%	45.5%	370	309	679
	26-35	52.8%	47.2%	1438	1286	2724
	36-45	55.0%	45.0%	1588	1297	2885
	46-55	53.6%	46.4%	1212	1051	2263
	56-65	55.6%	44.4%	430	343	773
	66+	35.6%	64.4%	21	38	59
Work Level	All	53.8%	46.2%	6357	5464	11821
	Not Identified	55.1%	44.9%	2061	1680	3741
	Entry Level Employee	53.1%	46.9%	127	112	239
	Non-Supervisory	52.9%	47.1%	872	775	1647
	Supervisor	53.6%	46.4%	785	680	1465
	Manager	52.9%	47.1%	1996	1774	3770
	Executive	54.0%	46.0%	433	369	802
	Top Executive	52.9%	47.1%	83	74	157
Education Level	All	53.8%	46.2%	6357	5464	11821
	Not Identified	54.8%	45.2%	2034	1681	3715
	Some High School	39.3%	60.7%	11	17	28
	High School / GED	50.1%	49.9%	210	209	419
	Trade / Technical	48.8%	51.2%	61	64	125
	Some College	53.4%	46.6%	549	480	1029

	Assoc. / Comm. College	54.5%	45.5%	289	241	530
	Bachelors Degree	53.2%	46.8%	1694	1489	3183
	Masters Degree	54.2%	45.8%	1145	967	2112
	Professional / Doctorate	53.5%	46.5%	364	316	680
Reason For Assessment	All	53.8%	46.2%	6357	5464	11821
	Not Identified	55.4%	44.6%	1623	1305	2928
	Training	53.3%	46.7%	3629	3182	6811
	Employment Testing	44.6%	55.4%	25	31	56
	Career Counseling	53.3%	46.7%	64	56	120
	Education	55.3%	44.7%	544	440	984
	Personal Growth	51.2%	48.8%	472	450	922
Time Between Assessments	All	53.8%	46.2%	6357	5464	11821
	Same Day	70.5%	29.5%	1216	509	1725
	Less than Week	59.3%	40.7%	898	617	1515
	Less than Month	50.7%	49.3%	609	592	1201
	Less than 6 Months	54.2%	45.8%	944	799	1743
	Less than 1 Year	49.8%	50.2%	635	640	1275
	Less than 2 Years	50.2%	49.8%	834	827	1661
	Over 2 Years	45.2%	54.8%	1221	1480	2701
First Assessment conflict style	All	53.8%	46.2%	6357	5464	11821
	Avoiding	47.0%	53.0%	1110	1253	2363
	Accommodating	34.3%	65.7%	394	755	1149
	Competing	52.3%	47.7%	795	724	1519
	Compromising	63.9%	36.1%	3053	1727	4780
	Collaborating	50 .0%	50.0%	1005	1005	2010

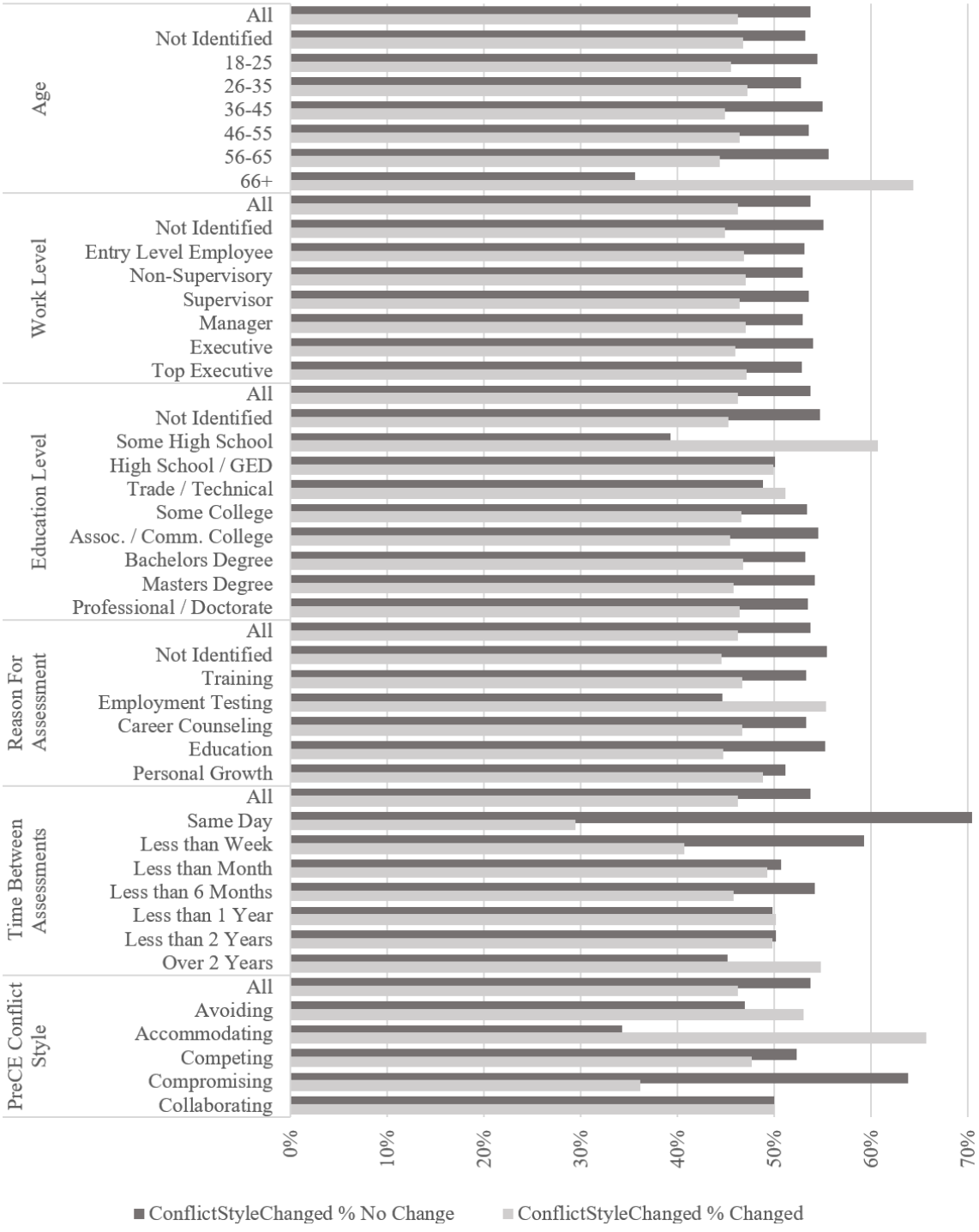

Figure 4. Independent Variable and Sub-Category by ConflictStyleChanged %.

The above Table 4 and Figure 4, demonstrate that participants are almost as likely to change their conflict style as have no change. At the independent variable level (rows labeled All) 46.2% of participants changed their conflict style and 53.8% had no change.

Examing the data at the sub-category level, most participants were slightly more likely to not change their conflict style than to change it. However, the difference in the percent of the population likely to change was proportionally split by, typically, not more than 10%. Only time between assessments – same day had substancially larger percent difference between no change (70.5%) and changed (29.5%). It is possible that the opportunity to reflect upon and practice the learning that took place between the first and second asessments was insufficient (Waithaka et al., 2015) for as many conflict style changes to manifest as seen in other cases.

There were also several cases where the likelihood of observing a conflict style changed was higher than no change. Education level – some high school (no change 39.3%, change 60.7%). It may be possible that these participants had little previous opportunity to receive conflict related training, and it was revelatory. Time between asessments - less than 1 year (no change 49.8%, changed 50.2%) and over 2 years (no change 25.2%, changed 54.8%) were more likely to see participants change their conflict style. The increased time between assessments may give participants an opportunity to both participate in more/longer training and have more opportunity to digest and practice any learnings. Both of these possibilities may increase the likelihood of observed higher incidence of conflict style change (Berens, 2018, Coleman, 2018, Waithaka et al., 2015).

The last section of Table 4 and Figure 4, looks at the overall ConflictStyleChanged partitioned by first assesment conflict style. For those participants whose first conflict style was avoiding were more likely to change (53.0%) then not change (47%). Accommodating were more likely to change (65.7%) than not change (34.3%). Competing were less likely to change (47.7%) than not change (52.3%). Compromising were less likely to change (36.1%) than not change (63.9%). Collaborating were as likely to change (50.0%) as to not change (50.0%).

Participants whose first conflict style was accommodating were the most likely (65.7%) to change conflict style across all case comparisons. Those participants whose time between asessments was same day were the least likely to change their conflict style.

All cases with a total participant count of less than 100, exhibited a higher likelihood of changing conflict style than not. Overall (no change 35.6%, changed 64.4%), some high school (no change 39.3%, changed 60.7%), and employment testing (no change 44.6%, changed 55.4%). The difference between these and other cases might be lesser with a larger sub-population for each case.

Table 5

Second Conflict Style Changed * First Conflict Style Crosstabulation

	First Assessment Conflict Style					
Second Assessment Conflict Style	Avoiding	Accommodating	Competing	Compromising	Collaborating	Total
No Change	1110	394	795	3053	1005	6357
Avoiding	0	255	141	494	207	1097
Accommodating	210	0	66	244	110	630
Competing	197	74	0	404	195	870
Compromising	545	285	336	0	493	1659
Collaborating	301	141	181	585	0	1208
Total	2363	1149	1519	4780	2010	11821

Table 5 shows the count of participants who had no change or changed to a second conflict style from each of the first assessed conflict styles. Overall 53.7% of participants did not change their conflict style. However, participants with a first conflict style of compromising (3053/6357=48.0%) were the most likely to have no change in conflict style. Participants with a first conflict style of accommodating (394/6357=6.2%) were the least likely to have no change in conflict style. A first conflict style of avoiding (1110/6357=17.4%), competing (795/6357=12.5%) and collaborating (1005/6357=15.8%) all showed a likelihood of less than 20% of not changing conflict style. With the exception of a first conflict style of compromising, all other participants were more likely to change their conflict style from the first-to-second assessment.

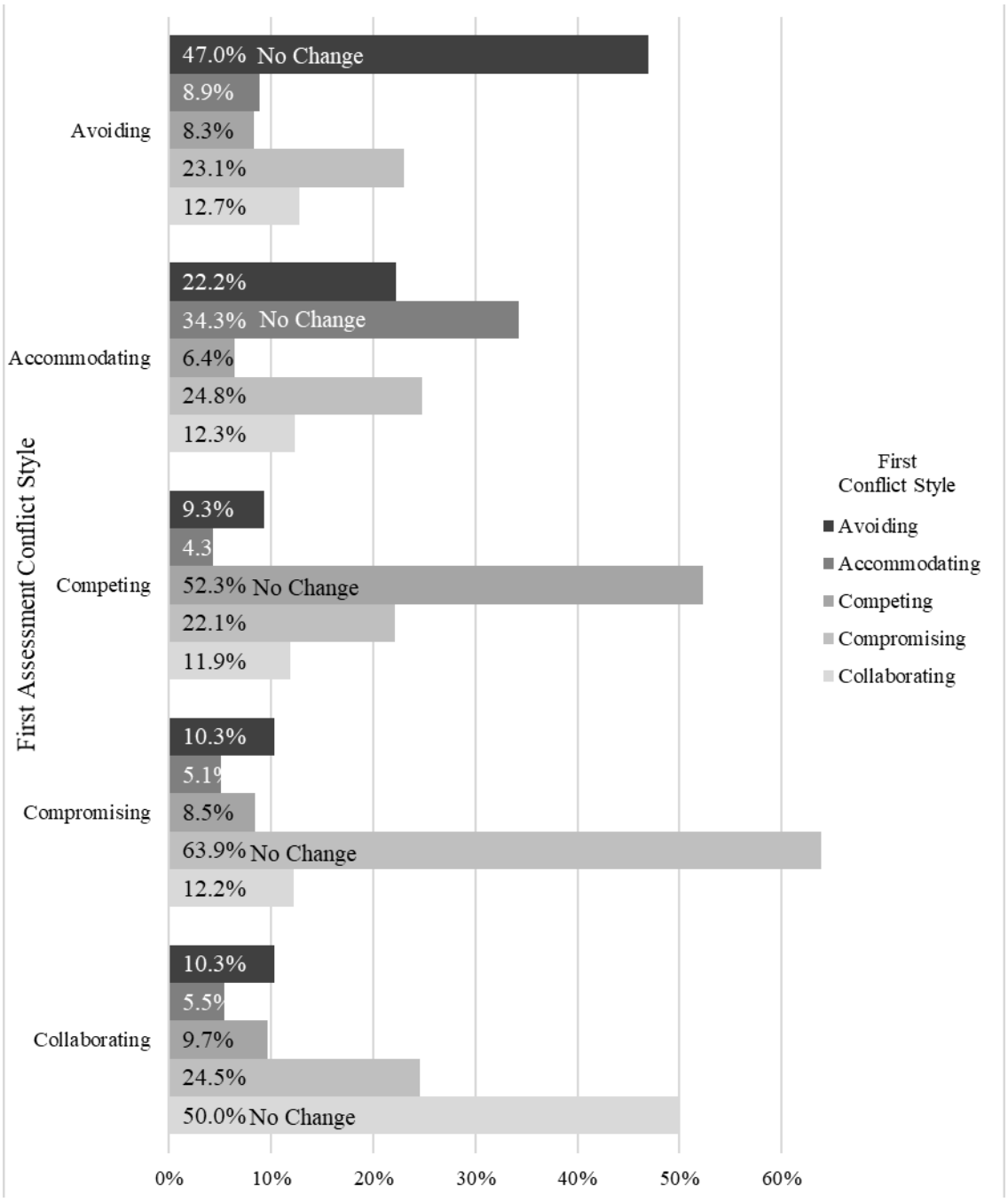

Figure 5. First Conflict Style Percent Changed * First Assessment Conflict Style.

Figure 5, above, shows the percentage breakdown across No Change plus the second conflict style sub-categories for each of the first conflict styles. This figure shows

which conflict style participants changed to. Changing to a second conflict style that is the same as the participant's first conflict style is marked as no change on the figure data labels.

First Assessment Avoiding. A first assessment conflict style of avoiding is slightly less likely (47.0%) to not change. However, of the 53.0% that did change participants were two to three times more likely (23.1%) to change to compromising. Participants were least likely to change to competing from avoiding (8.3%). The avoiding conflict style is defined as having low concern for self and low concern for others, and is typified by individuals who do not wish to commit time and energy to resolving conflict (Thomas & Kilmann, 1974; Thomas & Kilmann, 1978). That most first assessed avoiding participants do change their conflict style may indicate that a majority of these individuals do, as a result of the context changes, expect that engaging in some form conflict resolution interaction may be beneficial.

First Assessment Accommodating. A first assessment conflict style of accommodating is the least likely group (34.3%) to not change conflict style. Of the 65.7% of accommodating participants who are more likely to change their conflict style, they are almost as likely to change to avoiding (22.2%) as compromising (24.8%) and are least likely to change to competing (6.4%). The accommodating conflict style shows low concern for self and high concern for others (Thomas & Kilmann, 1974; Thomas & Kilmann, 1978). A change from accommodating to compromising might be expected, as participants learn increased awareness and expectation of concern for self. However, it is

somewhat surprising that the second largest change for accommodating participants is to avoiding (22.2%), indicating a reduced concern for others.

First Assessment Competing. A first assessment conflict style of competing is slightly more likely (52.3%) to not change conflict style. Of the 47.7% likely to change, more than twice as many are likely to change to compromising (22.1%) as any other conflict style. A change to avoiding (9.3%) is almost as likely as to collaborating (11.9%), and the least likely change is to accommodating (4.3%). The competing conflict style is typified by a high concern for self and a low concern for others (Thomas & Kilmann, 1974; Thomas & Kilmann, 1978). The majority of changed conflict styles to compromising (22.1%), indicated an increase in concern for others. It was also expected that the change to accommodating (4.3%) is the least likely choice for competing participants, as this would indicate a complete reversal in concern for self, versus concern for others.

First Assessment Compromising. A first assessment conflict style of compromising (63.9%) is the conflict style most likely to not change. The changed participants (36.1%) are more likely to change to collaborating (12.2%), and second most likely to change to avoiding. They are least likely to change to accommodating (5.1%). The compromising conflict style will usually show some concern for both self and others, and will sacrifice concern for self to gain or maintain a perceived relationship with others (Thomas & Kilmann, 1974; Thomas & Kilmann, 1978). It is not surprising that the majority of compromising participants did not change to another conflict style. In many conflict situations, the parties have a pre-existing relationship or expect there to be an

ongoing relationship. This leads to a willingness to compromise, split the difference, or otherwise sacrifice gain to minimize any negative conflict consequences that might damage the relationship. Of those who did change conflict style, most were likely to change to collaborating (12.2%). It is surprising, however, that the change to avoiding(11.6%) was so high. This means some participants went from having a concern for self and concern for others to having low concern for both self and others, from a willingness to engage and negotiate to a desire to avoid conflict, even at the risk of gaining no advantage at all.

First Assessment Collaborating. For those participants with a first assessment conflict style of collaborating (50.0%), half are likely to not change. Also (50.0%) did change conflict style, with the majority being more than twice as likely to change to compromising (24.5%) compared to the other conflict styles. Participants with a first conflict style of collaborating are least likely to change to accommodating (5.5%). A collaborating conflict style will generally find those with high concern for self also having a willingness to find options that will satisfy the interests of others as well, even if that means exploring outside of the perceived bounds of the conflict (Thomas & Kilmann, 1974; Thomas & Kilmann, 1978). It is somewhat surprising that as many collaborating participants are likely to change (50.0%) as not change (50.0%). Collaborating is considered to be one of the more positive conflict styles in organizational training. Since those that do change are most likely to change to compromising, this may indicate a continued relatively high concern for both self and others. However, it is surprising that the second most likely change is to avoiding

(10.3%), which means some participants went from having a concern for self, concern for others, and a willingness to find ways to expand the relationship to low concern for self and low concern for others.

In all cases, of those participants who changed conflict style, the most likely change is too compromising. This preference for compromising, amongst those who changed conflict style, is more than two times (2x) as likely over the other choices.

Inferential Statistics

To address the hypotheses, it is necessary to compare the categorical independent variable first assessed conflict style to the categorical dependent variable second assessed conflict style under various independent variable effects. By introducing a dummy dichotomous variable, ConflictStyleChanged, the data meets all of the necessary assumptions for binomial logistic regression (see also Chapter 3, Statistical Analysis Selection). ConflictStyleChanged was calculated as zero (0 – no change). if first conflict style is the same as second conflict style, and as one (1 - changed), when first assessed conflict style is different than second assessed conflict style, for each participant.

Table 6

Variables in the Equation: Second Conflict Style Different than First

							95% C.I.for EXP(B)	
Step	B	S.E.	Wald	df	Sig.	Exp(B)	Lower	Upper
FirstConflictStyle	-.156	.013	135.017	1	.000	.856	.834	.879
Constant	.353	.047	56.105	1	.000	1.424		

a. Variable(s) entered on step 1: FirstConflictStyle.

First-to-Second conflict style Change Analysis. A binomial logistic regression analysis was performed to ascertain whether there was a significant change in conflict

style between first and second assessed conflict style. The logistic regression model was statistically significant, $p<.0005$ (Table 6). This overall observation of conflict style across paired observations for each participant rejects $H1_0$ and supports $H1_a$: There is a significant difference in conflict style between the first and second assessment.

Table 7

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	136.142	1	.000
	Block	136.142	1	.000
	Model	136.142	1	.000

SPSS output, Table 7, shows Model as statistically significant, $p<.0005$, indicating that the overall statistical significance of the model, how well the model predicts categories compared to no independent variables, is a good fit to the study dataset (Laird, 2019).

Table 8

Classification Table

			Predicted		
			ConflictStyleChanged		Percentage
Step	Observed		No Change	Changed	Correct
1	ConflictStyleChanged	No Change	4853	1504	76.3
		Changed	3456	2008	36.7
	Overall Percentage				58.0

The cut value is .500

Table 8, shows the SPSS output indicating that the model correctly classified 58.0% of cases. Sensitivity was 36.7%, specificity was 76.3%, positive predictive value

was 57.2% (100 x (2008 ÷ (1504 + 2008)) and negative predictive value was 42.0%. (100 x (3456 ÷ (4853 + 3456)).

Table 9

Binomial Logistic Regression for Independent Variables

Independent Variable	Wald	df	Sig.
TimeBetweenAssessments	316.814	6	.000
ReasonForAssessment	5.175	5	.395
Age	18.844	6	.004
WorkLevel	3.760	6	.709
EducationLevel	18.011	8	.021

Independent Variable Analysis. Table 9, contains the SPSS output for the study independent variables examined against the dependent variable, ConflictStyleChanged. A binomial logistic regression was performed to ascertain the effects of time between assessments, reason for assessment, age, work level, and education level on the likelihood that participant conflict style changed first-to-second assessment. The logistic regression model was statistically significant for time between assessments (p<.0005), age (p = .004) and education level (p = .021). reason for assessment (p =.395) and work level (p =.709) did not yield statistical significance.

The observation of conflict style change between paired observations for each participant related to the independent variable age rejects $H2_0$ and supports $H2_a$: There is a significant relationship between age and conflict style change.

The observation of conflict style change between paired observations for each participant related to the independent variable work level supports $H3_0$: There is no significant relationship between work level and conflict style change.

The observation of conflict style change between paired observations for each participant related to the independent variable education level rejects $H4_0$ and supports $H4_a$: There is a significant relationship between education level and conflict style change.

The observation of conflict style change between paired observations for each participant related to the independent variable reason for assessment supports $H5_0$: There is no significant relationship between reason for assessment and conflict style change.

The observation of conflict style change between paired observations for each participant related to the independent variable time between assessments rejects $H6_0$ and supports $H6_a$: There is a significant relationship between time between assessments and conflict style change.

Independent Variable Sub-Category Analysis. The following table contains the SPSS output for binomial regression logistical analysis for each sub-category of each independent variable calculated independently.

Table 10

Binomial Logistic Regression for Independent Variables Sub-Categories

	Sub-Categories	B	S.E.	Wald	df	Sig.
Age						
0	Not Identified		(reference category)			
1	18-25	-.720	.284	6.441	1	.011
2	26-35	-.758	.290	6.833	1	.009
3	36-45	-.736	.280	6.877	1	.009
4	46-55	-.883	.280	9.939	1	.002
5	56-65	-.819	.280	8.521	1	.004
6	66+	-.886	.287	9.553	1	.002
WorkLevel						
0	Not Identified		(reference category)			
1	Entry Level Employee	-.046	.178	.067	1	.796

2	Non-Supervisory Employee	.130	.213	.370	1	.543
3	Supervisor	.073	.171	.181	1	.670
4	Manager	.046	.172	.070	1	.791
5	Executive	.053	.167	.102	1	.750
6	Top Executive	-.038	.178	.046	1	.830
EducationLevel						
0	Not Identified		(reference category)			
1	Some High School	.055	.097	.320	1	.572
2	High School Diploma / GED	.778	.404	3.715	1	.054
3	Trade / Technical Training	.329	.129	6.479	1	.011
4	Some College (No Degree)	.264	.199	1.769	1	.184
5	Associate / Community College Degree	.081	.102	.627	1	.429
6	Bachelors Degree	.047	.119	.154	1	.694
7	Masters Degree	.027	.087	.095	1	.758
8	Professional Degree (e.g. DDS, JD, MD) / Doctorate	-.057	.090	.403	1	.525
ReasonForAssessment						
0	Not Identified		(reference category)			
1	Training	-.081	.101	.643	1	.423
2	Employment Testing	-.107	.072	2.178	1	.140
3	Career Counseling	.386	.291	1.762	1	.184
4	Education	-.005	.199	.001	1	.979
5	Personal Growth	-.078	.098	.628	1	.428
TimeBetweenAssessments						
0	Same Day		(reference category)			
1	Less than Week	-1.114	.067	275.417	1	.000
2	Less than Month	-.630	.067	89.529	1	.000
3	Less than 6 Months	-.268	.071	14.423	1	.000
4	Less than 1 Year	-.391	.063	38.684	1	.000
5	Less than 2 Years	-.207	.068	9.105	1	.003
6	Over 2 Years	-.212	.063	11.328	1	.001

The SPSS output captured in Table 10 was performed to ascertain the effects of each sub-category on the likelihood that participant conflict style changed.

Age supports $H2_a$, and all age sub-categories were statistically significant also rejecting $H2_0$ independently and supporting $H2_a$. Work level and independent analysis for

each sub-category support $H3_0$. Education level rejects $H4_0$ and supports $H4_a$, however there is variation in the support for $H4_0$ when examining the analyses of the sub-categories. Independently only trade / technical training (p=.011) rejects $H4_0$, and supports $H4_a$. All other sub-category analyses support $H4_0$. High school diploma / GED (p=.054) was very close to rejecting $H4_0$ at the 95% CI, but ultimately supported $H4_0$. Reason for assessment supports $H5_0$, as does the analysis on all sub-categories. Time between assessments rejects $H6_0$ and supports $H6_a$, as does all sub-category analyses.

First conflict style Analyses. Observation of previous analysis suggested that there may be a statistically significant relationship between first assesses conflict style of a participant and their second assessed conflict style. The following table contains the SPSS output for FirstConflictStyle analyses for relationship to ConflictStyleChanged. This analysis examines whether the participant first conflict style is related to a change in in conflict style.

Table 11

Binomial Logistic Regression for First Assessed Conflict Style

First conflict style	B	S.E.	Wald	df	Sig.	Exp(B)
FirstConflictStyle			415.977	4	.000	
Avoiding	.691	.051	183.211	1	.000	1.996
Accommodating	1.220	.069	312.143	1	.000	3.388
Competing	.476	.060	63.953	1	.000	1.610
Compromising	-.570	.054	112.062	1	.000	.566
Collaborating	.570	.030	358.049	1	.000	1.768

Note: Analysis was performed with the default Binomial Logistic Regression reference item of “last” (Collaborating), except in the case of Collaborating, where the most populated case, Compromising was used as the reference.

The logistic regression model output in Table 11 was statistically significant for first assessed conflict style overall ($p<.0005$), and for each of the conflict style sub-categories, avoiding ($p<.0005$), accommodating ($p<.0005$), competing ($p<.0005$), compromising ($p<.0005$), and collaborating ($p<.0005$). Calculations for avoiding, accommodating, competing and collaborating used an Intercept / Reference Category of compromising (4), and the Intercept / Reference Category avoiding (1) was used for the compromising calculations. A participants' first assessed conflict style is significantly related to conflict style change.

Analyses with Selection Variable. Because first assessed conflict style related to conflict style change is statistically significant, as demonstrated in the previous analysis, the independent variable binomial logistic regression was performed again for each value of the first assessed conflict style as the SPSS selection variable to explore any statistical significance of the independent variables for each first assessed conflict style. These analyses explored any significant relationships between the study independent variables when the study population was partitioned by first assessed conflict style.

Table 12

Independent Variable Binomial Logistic Regression First Assessed Conflict Style Selection Variable

		First Assessed conflict style				
	No Selection Variable	Avoiding	Accommodating	Competing	Compromising	Collaborating
Category / Sub-Category	Sig.	Sig.	Sig.	Sig.	Sig.	Sig.

Age		.004	.006	.751	.024	.382	.001
0	Not Identified	(ref)	.220	.925	.068	.511	.034
1	18-25	.011	.176	.538	.152	.414	.017
2	26-35	.009	.490	.753	.032	.706	.030
3	36-45	.009	.219	.642	.023	.696	.016
4	46-55	.002	.223	.789	.101	.602	.009
5	56-65	.004	.133	.762	.073	.459	.008
6	66+	.002	.220	.925	.068	.511	.034
WorkLevel		.709	.001	.708	.381	.547	.138
0	Not Identified	(ref)	.791	.424	.085	.476	.672
1	Entry Level Employee	.796	.345	.362	.638	.639	.743
2	Non-Supervisory Employee	.543	.889	.433	.444	.426	.504
3	Supervisor	.670	.622	.465	.490	.695	.887
4	Manager	.791	.344	.735	.439	.693	.938
5	Executive	.750	.066	.681	.281	.772	.399
6	Top Executive	.830	.791	.424	.085	.476	.672
EducationLevel		.021	.981	.649	.025	.628	.069
0	Not Identified	(ref)	.632	.260	.018	.416	.696
1	Some High School	.572	.999	.436	.188	.199	.478
2	High School Diploma / GED	.054	.383	.049	.431	.579	.011
3	Trade / Technical Training	.011	.617	.534	.411	.430	.667
4	Some College (No Degree)	.184	.646	.508	.968	.478	.026
5	Associate / Community College	.429	.884	.153	.875	.934	.355
6	Bachelors Degree	.694	.669	.554	.506	.432	.052
7	Masters Degree	.758	.949	.400	.733	.481	.358
8	Professional Degree / Doctorate	.525	.632	.260	.018	.416	.696
ReasonForAssessment		.395	.523	.648	.166	.711	.416
0	Not Identified	(ref)	.461	.532	.893	.107	.683
1	Training	.423	.739	.570	.383	.171	.650
2	Employment Testing	.140	.727	.392	.109	.781	.361
3	Career Counseling	.184	.569	.523	.195	.760	.124
4	Education	.979	.092	.961	.121	.278	.601
5	Personal Growth	.428	.461	.532	.893	.107	.683
TimeBetweenAssessments		.000	.000	.000	.000	.000	.000
0	Same Day	(ref)	.000	.000	.000	.000	.000
1	Less than Week	.000	.001	.000	.000	.000	.003
2	Less than Month	.000	.820	.001	.001	.006	.691
3	Less than 6 Months	.000	.007	.005	.000	.002	.093
4	Less than 1 Year	.000	.716	.022	.000	.682	.459
5	Less than 2 Years	.003	.355	.002	.130	.394	.052
6	Over 2 Years	.001	.000	.000	.000	.000	.000

Table 12 contains the SPSS output for the study independent variables and each variable sub-category for which a binomial logistic regression was performed to ascertain the effects of each sub-category on the likelihood that participant conflict style changed between first and second assessment. Previous variable / sub-category significance output was included in the no selection variable column for comparison against each case of the selection variable first assessed conflict style (avoiding, accommodating, competing,

compromising and collaborating). The values under the no selection variable and each of the first assessed conflict styles is the SPSS calculated statistical significance output at the 95% CI level for the category/sub-category row. These analyses repeat the previous independent variable by sub-category analyses across all study variables, but limiting the population (*n*) for each calculation by the participants' first assessed conflict style.

Focusing on the age row, age was statistically significant (p=.004) with no selection variable present, and with avoiding (p=.006), competing (p=.024) and collaborating (p=.001). Age was not statistically significant for accommodating (p=.751) or compromising (p=.382). Within the age sub-categories, all sub-categories where statistically significant for the no selection variable and collaboration and all age sub-categories were not significant for accommodating and compromising, consistent with age category as a whole for those first assessed conflict styles. However, avoiding and competing showed variation across age sub-categories: Avoiding was significant for age overall, but no individual age sub-category was significant for avoiding. Competing was significant for age overall, but 18-25, 46-55, 56-65, and 66+ showed no statistically significant relationship to conflict style change. Age analyses, in general, supports $H2_a$, with some observed exceptions. In particular the 26-35 and 36-45 sub-categories showed a correlation to conflict style change if their first assessed conflict style was competing. This is consistent with observations in other studies where competitive young adults may be resistant to conflict style change (Gbadomosi et al., 2014) and older adults who have been successful in their organizations may not be as open to new learnings and changing environments (Tams et al. 2018).

Work level was not statistically significant overall (p=.709), however work level was statistically significant (p=.001) to a first assessed conflict style of avoiding. None of the avoiding sub-category to work level analyses demonstrated any statistical significance. All other work level to first assessed conflict style analyses were not significant. While some studies have observed a relationship between conflict style and work level (Eckstat, 2002; Vestal 2011; Thomas & Thomas, 2008) there is no support in these analyses to indicate that being at a particular work level is significantly related to conflict style change.

Education level was statistically significant (p=.021) with no selection variable, significant under competing (p=.001), and not significant under avoiding (p=.981), accommodating (p=.649), compromising (p=.628), and collaborating (p=.069). Some high school, in contrast to education level overall was not significant under any first assessed conflict style. High school diploma / GED was significant under collaboration (p=.011) and not significant under all other first assessed conflict styles. The trade / technical training sub-category was significant with education level overall for the no selection variable and was not significant under any first assessed conflict style. Associate / community college degree, bachelors degree and masters degree were not significant under no selection variable or first assessed conflict styles. Professional degree / doctorate was not significant under the no selection variable, avoiding, accommodating, compromising and collaboration, but was significant under competing (p=.018).

Reason for assessment was not statistically significant overall ($p=.395$). This was consistently observed under each of the first assessed conflict style selection variable calculations.

Time between assessments was statistically significant overall ($p<.0005$), and under all selection variables values. Same day, less than week, and over 2 years were significant for the no selection variable and under all first assessed conflict styles. Less than month was significant overall ($p<.0005$), significant under accommodating ($p=.001$), competing ($p=.001$) and compromising ($p=.006$), and not significant under avoiding ($p=.820$) and collaborating ($p=.691$). Less than 6 months was significant overall ($p<.0005$), significant under avoiding ($p=.007$), accommodating ($p=.005$), competing ($p<.0005$) and compromising ($p=.002$), but not significant under collaborating ($p=.093$). Less than 1 year was significant overall ($p<.0005$), significant under accommodating ($p=.022$), and competing ($p<.0005$), but not significant under avoiding ($p=.716$), compromising ($p=.682$), and collaborating ($p=.459$). Less than 2 years was significant overall ($p=.003$) and significant under accommodating ($p=.002$), but not significant under avoiding ($p=.255$), competing ($p=.130$), compromising ($p=.394$), and collaborating ($p=.052$). Over 2 years was significant overall ($p=.001$), and significant under all first assessed conflict styles. Larger time between assessments is significantly related to conflict style change, but observations and conclusions drawn by Waithaka et al. (2015) were not observed here. All time between assessment sub-categories are related to conflict style change, under most or all first assessed conflict styles.

Notable Observations

The following figure and table provide an analysis of the study dataset from a different perspective. Rather than explore the first assessment to second assessment conflict style change on an individual basis, instead each conflict style designation's percentage of the participant population was calculated fort the first and second assessment. Analysis was then performed on the percentage of population change to observe any statistically significant change in conflict style as a percentage of population for the first and second assessment.

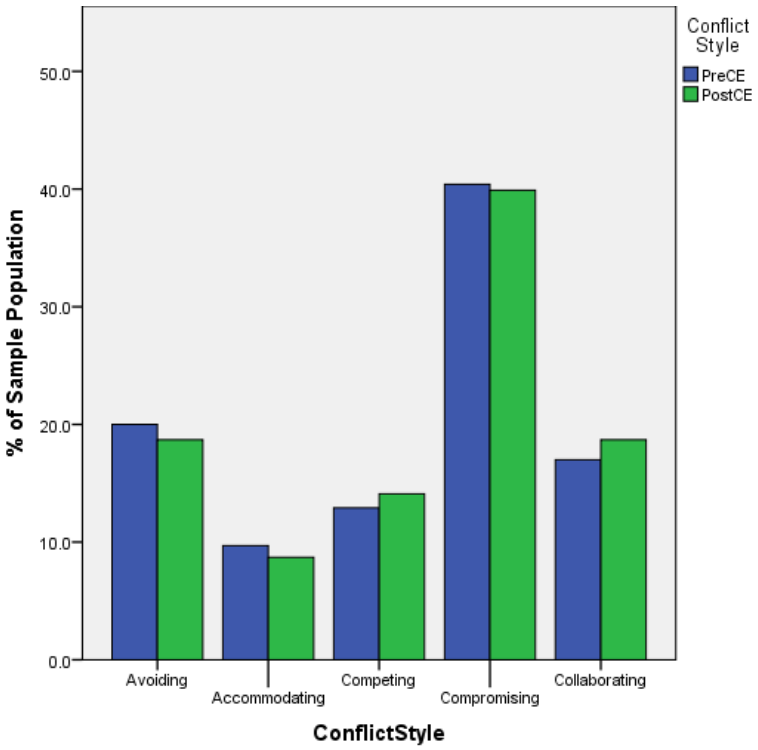

Figure 6. Conflict Style as a Percent of Population First-to-Second Assessment.

Table 13

Conflict Style Percent of Population First Assessment and Second Assessment Paired Samples Test

	Paired Differences							
				95% Confidence Interval of the Difference				
Pair	Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
FPoP[1]/SPop[2]	-.020	1.348	.603	-1.694	1.655	-.033	4	.975

[1]FPoP: First Assessment conflict style Percent of Population

[2]SPoP: Second Assessment conflict style Percent of Population

Figure 6 shows that the percent of the sample population for each conflict style is very similar first assessment compared to second assessment. Avoiding, accommodating and compromising showed a slight decrease in population percentage for the second assessments, with competing and collaborating increasing their relative percentage of the population for the second assessments. However, these changes were not significant. Table 13 contains the SPSS output for a Paired Samples T-Test for the comparison of the first assessment conflict style percent of population and second assessment conflict style percent of population. The test result does not indicate a statistically significant change, $t(4)=-.033$, $p=0.975$. This is an interesting observation in that, nearly half of all study participants changed their first-to-second assessment conflict style, yet the percent distribution of conflict styles across each population first assessment versus second assessment is essentially the same.

Summary

As a summary of statistically significant findings, the following table consolidates the results of the descriptive and inferential statistical analysis. Each independent variable is represented as a row under the variable / sub-category column. The sub-categories of each variable are listed in rows under the variable. The "All" column value for each variable is the percent of participants whose conflict style changed first-to-second assessment. The sub-category percentages (rows) total to match the variable percentages. The other five columns, avoiding, accommodating, competing, compromising, and collaborating under the sub-populations grouping represent the same structure as "All", but for a sub-population where first assessment conflict style matches the column heading. Table cells highlighted in grey indicate conflict style change was statistically significant per analysis documented above in the Inferential Statistics section.

Table 14

Percent of Sample and Significant Conflict Style Change

		Sub-Populations				
Variable / Sub-Category	All	Avoiding	Accommodating	Competing	Compromising	Collaborating
TimeBetweenAssessments	46.2%*	53.0%*	65.7%*	47.7%*	36.1%*	50.0%*
Same Day	4.3%*	4.6%*	4.4%*	5.3%*	3.6%*	4.8%*
Less than Week	5.2%*	6.9%*	8.9%*	4.9%*	3.3%*	5.9%*
Less than Month	5.0%*	6.2%	7.9%*	4.7%*	3.7%*	5.4%
Less than 6 Months	6.8%*	8.1%	9.8%*	7.2%*	5.3%*	6.5%
Less than 1 Year	5.4%*	6.3%	6.9%*	3.7%*	4.9%	6.2%
Less than 2 Years	7.0%*	8.5%	8.5%*	7.4%	5.9%	6.6%*
Over 2 Years	12.5%*	12.3%*	19.3%*	14.5%*	9.5%*	14.6%*
ReasonForAssessment	46.2%	53.0%	65.7%	47.7%	36.1%	50.0%
Not Identified	11.0%	12.7%	15.1%	13.3%	8.0%	12.3%
Training	26.9%	30.0%	37.6%	25.4%	21.9%	30.2%

Employment Testing	.3%	.2%	.5%	.5%	.1%	.4%
Career Counseling	.5%	.5%	.5%	.4%	.4%	.7%
Education	3.7%	5.1%	6.7%	3.4%	2.8%	2.7%
Personal Growth	3.8%	4.6%	5.2%	4.7%	2.9%	3.6%
Age	46.2%*	53.0%*	65.7%*	47.7%	36.1%	50.0%*
Not Identified	9.6%*	11.1%	12.0%	11.5%	7.2%	10.9%*
18-25	2.6%*	2.4%	5.0%	3.0%	2.2%	2.2%*
26-35	10.9%*	13.0%	16.6%	10.9%	7.8%	12.2%*
36-45	11.0%*	12.2%	14.9%	11.1%*	8.9%	12.0%*
46-55	8.9%*	10.7%	13.3%	8.6%*	7.0%	8.9%*
56-65	2.9%*	3.1%	3.4%	2.0%	2.9%	3.1%*
66+	.3%*	.3%	.4%	.6%	.1%	.5%*
WorkLevel	46.2%	53.0%*	65.7%	47.7%	36.1%	50.0%
Not Identified	14.2%	16.3%	20.1%	16.1%	10.6%	15.5%
Entry Level Employee	.9%	1.6%	1.5%	.8%	.6%	.9%
Non-Supervisory	6.6%	8.3%	11.1%	5.2%	5.1%	6.4%
Supervisor	5.8%	7.1%	8.6%	5.1%	4.4%	6.3%
Manager	15.0%	15.8%	19.4%	15.7%	12.7%	16.6%
Executive	3.1%	3.5%	4.2%	4.1%	2.2%	3.5%
Top Executive	.6%	.5%	.9%	.7%	.5%	.8%
EducationLevel	46.2%*	53.0%	65.7%	47.7%*	36.1%	50.0%
Not Identified	14.2%	16.5%	18.5%	17.7%*	10.5%	15.3%
Some High School	.1%*	.1%	.5%	.3%	.1%	.0%
High School / GED	1.8%	2.5%	3.0%*	1.1%	1.2%	2.0%*
Trade / Technical	.5%	.7%	.9%	.5%	.4%	.5%
College (No Degree)	4.1%	4.9%	7.3%	3.2%	2.9%	4.5%*
Assoc. / Community	2.0%	2.5%	2.5%	1.8%	1.6%	2.5%
Bachelors Degree	12.6%	14.3%	16.7%	12.8%	10.0%	14.2%
Masters Degree	8.2%	8.3%	11.9%	7.6%	7.3%	8.6%
Professional / PhD	2.7%	3.3%	4.3%	2.6%	2.1%	2.4%
First Assessment conflict style	46.2%*					
Avoiding	10.6%*					
Accommodating	6.4%*					
Competing	6.1%					
Compromising	14.6%*					
Collaborating	8.5%*					

*Statistically significant, at the 95% CI (p=.05), relationship between the row/column intercept and conflict style First-to-Second Assessment change (ConflictStyleChanged=1).

In almost all of the analyses conflict style changed first-to-second assessment. The observed first-to-second assessment change was, very nearly, proportionally with no change across the dataset, and for most partitioned sub-populations. Within the dataset as a whole there is a significant relationship when examining conflict style change first-to-second assessment. The analyses strongly support rejecting $H1_0$ in support of the

alternative $H1_a$: There is a significant difference in conflict style between the first and second assessment. This finding helps answer the research question, RQ1: Can an individual's assessed conflict style change? Yes, conflict style does change. This finding is consistent with other research that supports that conflict style may be influenced by context, and expresses more as a state than a trait (Carsten et al., 2004; Gunkel et al., 2016; Rahim, 1986).

Participant age, overall, is significantly related to conflict style change first-to-second assessment. $H2_0$ is rejected, and the alternative is supported, $H2_a$: There is a significant relationship between age and conflict style change. This finding helps answer the research question, RQ2: Is there a relationship between any changes in conflict style and age, work level, education level, reason for taking the assessment, and time between assessments? Yes, there is a strong relationship between age and conflict style change. This relationship is supported at every age category.

Participant reported work level supports $H3_0$: There is no significant relationship between work level and conflict style change. This finding helps answer the research question, RQ2: Is there a relationship between any changes in conflict style and age, work level, education level, reason for taking the assessment, and time between assessments? No, there was no observed relationship between work level and conflict style change. This outcome was perhaps the most surprising. A prerequisite for advancement and promotion in organizations is a willingness, even eager anticipation, for change. This was not reflected in any relationship between various work levels and likelihood of an observed second assessment conflict style change. That is not to say that

participants in any work level were less likely to change conflict style first-to-second assessment (43.6% of them did change conflict style), only that work level does not seem to be correlated to the change. This outcome may warrant further research to determine if those participants that have recently changed work levels, or those who are in a position to expect a change might have a relationship to conflict style change, as opposed to those who are solidly in the middle of their work level, and may be focused on consistency and maintaining the status quo.

Analysis of education level, as reported by participants, rejects $H4_0$ and supports $H4_a$: There is a significant relationship between education level and conflict style change. This finding helps answer the research question, RQ2: Is there a relationship between any changes in conflict style and age, work level, education level, reason for taking the assessment, and time between assessments? Yes, there was an observed overall relationship between education level and conflict style change. However, examination of the sub-categories of education level observed that only trade / technical training had a clearly established relationship to second assessment conflict style change. At p=0.54, high school diploma / GED was close to the point of significance, but not quite there. This somewhat contradictory result is an artifact of the Binomial Logistic Regression model, by examining the sub-categories independently, the analyses are effectively looking at different partitions of the population. While this does not impact the overall observations of the relationship between education level and conflict style change, it might suggest that this is an area where additional research could be revelatory.

The participants' reason for assessment analysis supports $H5_0$: There is no significant relationship between reason for assessment and conflict style change. This finding helps answer the research question, RQ2: Is there a relationship between any changes in conflict style and age, work level, education level, reason for taking the assessment, and time between assessments? No, there is not statistical evidence that reason for assessment is related to conflict style first-to-second assessment change.

Time between assessments observed outcomes provides the strongest evidence amongst the study hypotheses, for rejecting the null hypothesis, $H6_0$, and supporting the alternate, $H6_a$: There is a significant relationship between time between assessments and conflict style change. This finding helps answer the research question, RQ2: Is there a relationship between any changes in conflict style and age, work level, education level, reason for taking the assessment, and time between assessments?

Yes, there is strong evidence of a statistically significant relationship of time between assessments and first-to-second assessment conflict style change. Consistent with the literature, longer periods between assessments may provide opportunity for extended training and practice of conflict competencies that may contribute to conflict style change.

When performing the same independent variable analysis on each sub-population as bounded by first assessment conflict style some interesting variances emerge. Age has a statistically significant relationship to conflict style change, but only first assessment observed avoiding, competing and collaborating show a similar significance. With a first assessment conflict style of accommodating or compromising, no significant relationship

is observed. Work level overall showed no significant relationship, however for first assessment conflict style of avoiding, a relatively strong statistical significance was observed. Education level overall was significant, but only the first assessment conflict style competing demonstrated a significant relationship to conflict style change. Reason for assessment had the least significant relationship to conflict style change and this outcome was observed for all first assessment partitions as well. Time between assessments was the opposite: overall significance was consistent with all first assessment partitions.

The percentage distribution of first assessment conflict style, i.e. the percentage of the first assessment population that fell into each conflict style category, was proportionally the same as the percentage distribution of second assessment conflict style. There was some expectation that there would be a move to a more preferred or better (from the perspective of any conflict related organizational related training) conflict style for those participants that did change first-to-second assessment. This was observed in the first assessment case by case analysis, where there seem to be a preference for compromising as the second assessment conflict style. However, there were many observed cases of participants moving from a first assessment to a second assessment conflict style that might be considered a less than positive move. For example the 10.3% of compromising (concern for self and concern for others with a willingness to negotiate) participants who changed to avoiding (low concern for self and low concern for others with no desire to engage in resolving conflict); and those (4.3%) that changed from competing (high concern for self and low concern for others) to the exact opposite,

accommodating (low concern for self and high concern for others). Some analyses suggest compromising may be a more preferred conflict style to change to, but, overall, no significantly preferred conflict style was observed. The inconsistency of second assessment conflict style change suggests there may be a need to explore this observation in more depth.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The principle objective of this quantitative, correlational study is to examine the question of whether assessed conflict style can change as observed by participants completing two TKI assessments at different times, and to explore how age, work level, education level, reason for assessment and time between assessments may be related to any observed change in conflict style. The dataset of first and second TKI assessments, with 11,281 participants, is drawn from a variety of other research, and in its consolidated form constitutes a larger participant population then most other conflict style assessment related research. Under a Postpositivist paradigm, using captured measurements and standard statistical analysis tools, this study is verifiable and reproducible. The combination of a quantitative approach paired with a very large dataset means this study is both reproducible and that any observed correlations are likely to be representative of much larger populations.

The ontological perspective of this study lies in the understanding that much of what we know of conflict and how we behave when in conflict is learned. The theoretical foundations of this study suggest that expressed conflict style, observable conflict handling behavior, may change over time and with context. As such, this study hopes to add to the research and applied understanding in the fields of conflict analysis and resolution and organizational training that conflict style is a state that can change temporally and contextually. Conceptualizing conflict style as a state makes it inappropriate to consider conflict style as an immutable trait that can be measured once

and used to classify or label individuals forever. Conflict style should be viewed as an available metric, which can be most appropriately used to contribute to the evaluation of conflict competency training needs and outcomes.

Almost as many participants in this study changed their conflict style, first-to-second assessment, as did not. The analyses found a significant relationship when examining conflict style change first-to-second assessment. The study also found a significant relationship between age, education level and time between assessments and conflict style change. No significant relationship was observed between work level and reason for assessment and conflict style change. Analyses across the same independent variables using a selection variable of first assessed conflict style showed similar results, with a number of notable exceptions. Age was not found to be significantly related to conflict style change for participants with a first assessment conflict style of accommodating or compromising. Work level overall was not significantly related to conflict style change, however for those participants with a first assessment conflict style of avoiding, a relatively strong statistical significance to conflict style change was observed. Education level overall was significant, but only the first assessment conflict style of competing, which demonstrated a significant relationship to conflict style change. Reason for assessment showed consistent lack of significance to conflict style change and time between assessments showed consistent significance overall and when examined across the selection variable sub-population partitions.

The percentage distribution of first assessment conflict style compared to second assessment conflict style was proportionally very nearly the same. Despite the fact that

close to half of all participants changed conflict style first-to-second assessment, there was no significant results that indicated participants preferred any particular second assessment conflict style. However, of those participants who did change conflict style first-to-second assessment, they were more than twice as likely to change to compromising over other conflict styles. While this study does not provide any reliable second assessment predictivity, it does provide strong correlational evidence that conflict style does change temporally and contextually.

Interpretation of the Findings

Much organizational conflict training focuses on self and other conflict style awareness (Sternberg and Soriano, 1984; Graziano, et al., 1996; Wood & Bell 2008). This study's findings suggest that any organizational conflict training should be cognizant of how easily and often conflict style can change. Observations of almost half of all participants changing conflict style in a wide variety of circumstances, suggests that being aware of one's own conflict style, and the conflict style of others may be so contextually and temporally bounded as to be an inappropriate condition for the selection and evaluation of organizational conflict training.

The Theoretical Foundation of this study holds that learning will inform upon behavior. Behaviorism, Cognitivism, and Constructivism all describe different mechanisms for the acquisition of knowledge, and all support that learnings influence observable behavior. Further, each theory subscribes to the concept that we cannot help but learn as we go through life and observe and interact with the world and other people. This suggests that anything that can be learned, can have an influence on how we

understand and express ourselves in the world. This study's findings suggest that over longer periods of time conflict style is likely to change, and that even over short durations, almost half of all participants assessed two times will change will demonstrate a changed conflict style assessment. Learning is not always, necessarily, a good thing. We can learn bad behavior when modelling others behaving badly. Inaccurate information can be acquired and assimilated as easily as factual information. Social pressures can encourage a world view that would be inappropriate in other circumstances.

Table 15

First-to-Second Assessment Conflict Style Percent Change

	Second Assessment Conflict Style				
First Assessment Conflict Style	Avoiding	Accommodating	Competing	Compromising	Collaborating
Avoiding	47.0%*	8.9%	8.3%	23.1%	12.7%
Accommodating	22.2%	34.3%*	6.4%	24.8%	12.3%
Competing	9.3%	4.3%	52.3%*	22.1%	11.9%
Compromising	10.3%	5.1%	8.5%	63.9%*	12.2%
Collaborating	10.3%	5.5%	9.7%	24.5%	50.0%*

*No conflict style change First-to-Second Assessment

Similarly, the findings of this study, see Table 15, demonstrate that, for those who change conflict style, there is a higher, though not significantly, observed likelihood of a change to a compromising conflict style. This study did not provide any predictive guidance on

which conflict style an individual will change to overall, but does provide strong evidence that some learnings are likely to change conflict style.

Conflict style, as observed in this study does not appear to be reliably consistent across time, environment and circumstance. Conflict style is almost as likely to change as not, for an individual first-to-second assessment. This strongly suggests that conflict style is more of a state, influenced by, among other things, learning, than a trait. The research that has observed relationships between personality type and conflict style (Chalkidou, 2011; Marion, 1995; Thomas & Kilmann, 1974; Wang, 2010; Wood & Bell, 2008) has only found limited correlation between specific subsets of personality type with specific conflict styles. The findings here should highlight that any evidence that personality type is a predictor of conflict style is very likely to be temporal and situational. Any relationship between unchanging personality type traits and conflict style seems sufficiently tenuous enough to suggest that valid research into the relationship needs to include examination of conflict style measurements in varying situations over time.

The importance of observing conflict style change over time should also inform upon single use conflict style assessments for organizational pre-hire and training requirement purposes. Caution should be exercised when examining one-time conflict style assessment results in the light of this study's findings. Conflict style is not something that someone has or is, but merely a snapshot in time and circumstance.

Many organizations in the US, have an expectation of employees/members to be cooperative and collaborative; much organizational conflict training focuses on team building and problem solving. Some research (Gross & Guerrero, 2000) even proposes

that some conflict styles are more positive or desirable than others. The findings here indicate that, when individuals change conflict style, there is some increased likelihood that they will change to compromising, however none of this study's variable analyses observed this as a significantly increased likelihood.

According to the literature, emotional intelligence, cultural intelligence, training, culture and social expectation have all shown some relationship to conflict style. The findings here suggest that conflict style is sufficiently malleable, or alternatively, fragile, as to be likely to change as individuals engage in conflict related training such as EI, CI and other socially adaptive integration skills.

This study did not observe any significant direct relationships between management experience (work level) and conflict style. Any implied understanding of conflict related to higher levels of promotion in an organization, or relationship of conflict style change to level and type of management experience were not observed. However, age, overall, was correlated with conflict style change. The findings indicated that most participants, at all ages are almost as likely to change conflict style as not. However, there were several interesting observations: 1) 18-25 year olds were less likely to change away from a competing conflict style than other age groups, and 2) 66+ year olds were the least likely to change away from an accommodating conflict style. This finding appears to support Shabbir et al. (2018), that competitive young adults will remain more competitive, and Tu et al. (2005) who identified a resistance to change in older adults.

Previous research has observed reflexivity and conflict competency training to modify observable specific conflict handling behaviors, such as bias management, reduction of negative habitual response, perception and framing, and cognitive selection of tactical conflict behavior (Astor, 2007; Brockman et al., 2010; Coleman & Lim, 2001; Conerly & Tripathi, 2004; Garaigordobil & Martínez-Valderrey, 2015; Rothman, 2014; Vindeløv, 2012). This study does not identify specific conflict competency education as part of the time between first and second assessments, however, the findings support previous research that found learning, education and practical training in conflict resolution related skills and processes are related to conflict management style change.

Most organizations value the many benefits of conflict competency training: collaborative negotiation behaviors, positive thoughts, feelings, attitudes and outcomes, better problem-solving skills, better communications skills, team cohesiveness and effectiveness (Coleman & Lim, 2001; Rahim, 2002; Gross and Guerrero, 2000). Organizations have a vested interest in identifying the conflict competency trainings that will most likely influence organization members to adopt conflict handling behaviors of benefit to the organization. While conflict style has been used to assess individuals before, and less frequently, after organizational conflict training, this study suggests that a more appropriate use of conflict style assessment might be in using measurement of conflict style change, before and after, across training populations, to assess the training itself, rather than the individuals. Identifying patterns of change in conflict style for specific training, may help refine training frameworks to illicit conflict handling behavior that is viewed as more positive by the organization. Continuous conflict competency

training and the opportunity to practice those skills will help individuals to cognitively select contextually appropriate conflict handling behavior (Brewer et al., 2009; Romano et al., 2017). Using conflict style assessment as a measure of state, and an evaluation of learning may help organizations get better at selecting the right conflict competency trainings.

Conflict identifies problems, challenges and opportunities. Avoiding conflict forgoes the chance for organizations to garner benefit from those opportunities. Recognizing that conflict style is a training/learning alterable state allows organizations to position their training programs to maximize positive benefit from conflict. Incorporating the findings of this study by acknowledging conflict style can change and that conflict style assessment can be appropriately used as a measure of conflict learning exercise outcome, can help organizations find ways to better solve problems and more effectively address conflict with a positive, productive approach. An individual's conflict style is influenced by training, but is also socially constructed by an organizations expectations and management (Brewer & Lam, 2009). Conflict style assessment can most appropriately be used to identify which organizational factors contribute to conflict style change by individuals, and thus help discover which conflict style is most beneficial and productive in an organizational environment.

The findings in this study strongly support that conflict style for individuals can change as the result of conflict training/learning. But, also noted, is that the change is not necessarily to, what might be considered, a better conflict style. In fact, conflict style can change from high concern for self and others (compromising and collaborating) to, in

some cases, the exact opposite with low concern for self and low concern for others (avoiding and accommodating). These observations do not diminish the findings of this study because the direction of change (better/worse, positive/negative) are independent of the observation that significant change did occur. However, the observation that, what could be considered, negative change did occur highlights the obligation of organizational training frameworks to recognize that damage to individuals ability to deal with conflict can be an outcome of conflict training and education programs.

Limitations of the Study

Within the confines of the research questions and objectives of this study the outcomes have a high degree of validity, reliability and reproducibility. Because of the study population size and the standard use of analysis tools, the study is likely to be generalizable to larger populations. However, this study worked with a dataset randomly selected from a much larger collection of TKI assessments, acquired for a variety of reasons, with varying research instructions and assumptions communicated to participants. The primary area of concern that may limit the application of this study to broader circumstance is the non-specific nature of the training that may have occurred between assessments. Any first-to-second assessment learning composition, and the epistemological approach of the underlying research was not within the control of this study; the educational content, opportunity for practical application, directions, assumptions, expectations and duration of first-to-second assessment learnings where determined by other studies and circumstance.

Recommendations

Conflict style changed more frequently than was observed in some previous research. This study suggests observed conflict style change is almost proportional to no change as a percentage of the participant population in almost all analyses and observations. Because so many participants changed conflict style, and to such a varied collection of second assessment conflict styles, then future research should consider that there may be other related factors and influences on conflict style change than observed with the variables investigated here. Using the definition of context established in Chapter 1: everything that comes before a moment in time establishes an individual's context, yields that we should consider culture, family, community, health, level of stress, and other factors may contribute to defining the moment at which an individual has their conflict style assessed. How does this broader context contribute to conflict style? Conflict style does change, and while this study began the investigation into factors that may be related to that change, it does not predictably inform upon all of the factors which may be related to conflict style change. Additional research is required to help identify the breadth and boundaries of those factors related to conflict style change.

Assessment more than one time. The principal recommendation of this study is to appropriately view conflict style assessment as a contextually and temporally measured state. Conflict style should be measured more than once and should not be used as a label. Nor does it seem appropriate for conflict style be used as a single measurement to assess individual fitness for such things as promotion, hire, or selection of training.

Which learning theories inform upon effective conflict training? Observing and modelling behavior (Constructionist), repeating what was sufficient and worked in the past (Behaviorist), or learning the skills and processes established by others as effective in conflict management and resolution (Cognitivist)**,** may all contribute in varying degrees to effective conflict training. Research to determine the right epistemological approach to teaching effective conflict handling behavior, using multiple assessments to observe conflict style change would be invaluable to organizational conflict training.

Can conflict style be influenced by training content? If the objective of conflict training is to make organization members more compromising or collaborative, then which training content will achieve that goal? If an organization wants it members to be more competitive or accommodating, which training content is most appropriate to achieve that objective? Evaluation of organizational conflict training should, at a minimum, utilize a before and after conflict style assessment to help establish the likely conflict style change resulting from those training programs. It is also recommended that research related to conflict training explore in more depth the likely influence of each aspect of the training curricula. Examining training outcomes as a whole may show, as this study did, that the second assessed conflict style is not wholly predictable. Identifying which aspects of content can influence a desired change in conflict styles would help organizational training understand the specifics of what needs to be taught in order to help move individuals towards an organizationally preferred or expected conflict style.

Is age related to resistance to conflict style change? Are competitive and successful youngest and oldest organizational members always going to be more resistant to changing conflict style, or does conflict competency training need to be more age aware? It is recommended that additional research examine whether the type and/or style of training can positively influence the resistance to conflict style change observed in competitive young adults and successful older organizational members.

Duration or content? Is the duration of any conflict training a factor in influencing change in conflict style? In order for conflict training to be effective, must it include sufficient time to digest and practice the skill sets learned? This study's analysis of the time between assessments variable showed an increased likelihood of conflict style change as the time between assessments increased. It is recommended that future researchers consider not only the content, but the duration and structure of conflict training as an factor in assessing likelihood of influencing conflict style change.

Trait versus state change. Previous research has identified some relationships between conflict style and personality types and traits. The results of previous research has, in some cases, been both contradictory and inconclusive. However, this study may suggest that the relationship between who a person is, and their conflict style may not be about their assessed conflict style as measured at a point in time and context, but instead, about whether conflict style is likely to change, and to which other conflict style(s) for different personality types. While about half of all participants in this study did change conflict style, that means about half did not change conflict style. It is suggested that

future research take up the question of whether personality type (traits) are related to likelihood that an individual will change conflict style.

Conflict style influences. These results shed light on the possibility that one's age, level of education, and learnings over time, may significantly contribute to changes in conflict style. It is possible that other variables are also related to, or serve as predictors of, the possibility of change in conflict style. Therefore, I encourage future researchers to continue to explore the fluidity of conflict style, and the complex cognitive, social and behavioral factors that influence, and perhaps predict, change in conflict style.

Implications

To borrow from the observer effect: If the parties to a conflict know they are being observed, this may have a material impact on the context of the conflict by altering the parties' perceptions and behavior. This understanding can be extrapolated upon to identify a potentially significant benefit of measuring conflict style. If organizations regularly observe and report on the conflict style of members, then this opens up the possibility that knowing they will be observed, and knowing their conflict style will be part of their organizational record and performance evaluation, may have a material impact on the tactical choice of individual conflict-handling behavior. By extension, this knowledge may then have an impact on individuals expressed/observable conflict style. Measurement of conflict style may be construed as establishing an expectation of moving towards organizational conflict style preferences. Adding the expectation that conflict style will be observed, and measured, in an ongoing way, may help conflict parties be

more likely to utilize the conflict competency skills they have had training in and address organizational conflicts in a manner consistent with organizational standards and expectations.

Conflict style can change, and for those individuals who do change, the conflict style they change to, within the confines of this study, is not predictable. This suggests that conflict style may be a useful metric in assessing the outcome, and perhaps effectiveness, of conflict training and other organizational initiatives designed to influence individual conflict handling behavior. However, it also suggests that where an individual starts, is not necessarily predictive of where they will be after a period of learning. It is therefore important to recognize that a single measured conflict style would be inappropriately applied as a decision mechanism in determining anything about an individual, other than to say: at this moment, in this circumstance, the individual was assessed as a particular conflict style. This is a subtle, but important distinction. Conflict style may be appropriately used as an evaluation component to assess change across time and circumstance (which may include training) but should not be used to bound or label an individual for any purpose. Observing conflict style change informs more upon what happened between assessments, e.g. organizational training, than about the individual(s) assessed.

It should also be noted that labelling of any sort that can be seen as an assessment of more versus less, or better versus lesser. Labelling can have a negative consequence on self-perception, satisfaction and feelings of safety for individuals in an organization.

Positioning conflict style assessment as a measure of training effectiveness, and not as an individual label is very likely to be positively received by organization members.

The foremost implication of this study is that organizations should not rely upon measurement of conflict handling style to be predictive of ongoing or situation conflict handling choices by individuals. As context changes, so may individually assessed conflict styles. Rather than depend on conflict style to anticipate how someone will react in conflict situations, organizations should focus on creating the right type of training, evaluation and reward framework to help individuals, as a group, move collectively to a more positive (as defined by the organization) conflict style; using conflict style assessment as a mechanism for measurement of that process.

Conclusion

Conflict Style assessment is widely used in organizations to help individuals become aware of how they behave in conflict situations. This self-awareness is then used as a basis for training and to inform upon how individuals should approach conflict situations (Thomas & Kilmann, 1974; Shapiro, 2014; Shell, 2001). Some organizational training even recommends becoming aware of others' conflict handling style so that decisions for managing conflict between parties can focus on a prescribed approach, one that is suited to the particular combination of self and other (Sparks, 2018). However, a foundational element of organizational conflict management training is the assumption that individuals can become more effective at managing conflict with increased expertise and experience. These two concepts are at odds. If training can change conflict style then

conflict style should not be used to determine training or as a component of conflict decision making.

This study has contributed to the body of knowledge influencing conflict management and resolution training in organizations by demonstrating that, in as much as 50% of any given population, conflict style can change temporally and contextually for individuals. Further, age, level of education, and the time between assessments are significantly related to conflict style change. These findings help address the two premises not clearly established by prior research. First, is there a relationship between who someone is, defined by personality type and traits, and how they deal with conflict? Second, does a person's cumulative life experience, education and training have a material impact on assessed conflict style? This study has helped establish that conflict style is a state that is related to time and context, and is likely to change for many individuals over time and with learnings, including conflict related training. This finding means: First, that any relationship observed between immutable personality criteria, may, at a different time, or in a different circumstance, no longer have any observable relationship to conflict style. Second, the observed significant relationships between age, time between assessment, and education level, suggest that as an individual's context changes over time, so too will their assessed conflict style.

Conflict style is most appropriately described as a temporal measurement of preferred conflict handling behavior in a given circumstance. Using conflict style as a label to identify how individuals "will handle conflict", is not something that can, or should, be relied upon. Organizations should take this understanding as a stimulus to

evolve conflict training towards a focus on conflict competency, and away from awareness based intra-party prescriptions. Conflict style can be a valuable tool in organization training, as a metric for assessing the validity and effectiveness of conflict training, and a reinforcement of the recognition that individuals can learn, adapt, adopt and exhibit conflict handling skills without having labels impact self-perception in the organizations they choose to be a part of.

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Appendix A: Request for Research Support to CPP

CPP, Inc.
Request for Research Support

Prepared by CPP, Inc.

Research Division
White Bear Lake, MN

August, 2007

CPP, Inc. Request for Research Support
(Revised 10/06)

CPP is interested in supporting research by qualified investigators that will (1) build on and extend existing research, (2) develop new areas of inquiry, and (3) extend the use of CPP published assessments. CPP will entertain proposals of high quality in all areas of research, but is most interested in organizational, management, and executive applications or our assessment tools.

On the following pages, please provide the following information:

- Project title, names and affiliations of investigators.
- Problem statement and brief literature review.
- Description of research procedures, including the samples and materials.
- Description of the data analysis strategies to be employed.
- A time-line with major milestones.
- The nature of the support requested (e.g., materials, scoring, online delivery).

Requests for support should be accompanied by:

- A curriculum vita from the principal investigator.
- From graduate students: a signed statement from the student's major advisor indicating that the advisor has read and approved the proposal.

All proposals are expected to conform to the American Psychological Association's *Ethical Principles of Psychologists*, in particular Standards 8 and 9 that address Research and Assessment practices.

Requests for support and questions can be sent to research@cpp.com. Proposals will be reviewed within four weeks.

mailto:research@cpp.com

Appendix B: CPP Offer of Research Support

March 20, 2017

Michael P. Kelly MSc.
6780 Red Reef St.
Lake Worth, FL 33467
Email: mk973@nova.edu
Phone: 561-865-6807

Dear Mr. Kelly,

I am writing to inform you that we are pleased to offer our support for your project entitled, "Conflict Style is the result of cumulative skills training and experience. A quantitative study demonstrating conflict competence influence on assessed Conflict Style". Our support offer includes:

- $200 for 1) archival TKI dataset, including demographics, item responses, and TKI scores for approximately 10,000 individuals who have completed the assessment more than once; 2) archival "TKI dataset of approximately 100,000 additional individuals. Taxes may apply.

To accept our offer of support, please print and sign this letter and email to me at research@cpp.com By accepting this support you agree to: (a) provide regular progress reports, (b) present or publish your findings in a scholarly venue, (c) not share the data without further permission from CPP, and (d) not use support from CPP to develop competing instruments. I will send the requested materials following receipt of your letter of acceptance.

Sign here if you agree to these terms _____

This offer of support may be accepted through May 20, 2017.

I appreciate your interest in the TKI assessment and look forward to hearing about the results of your work. Please feel free to contact me if I can be of further assistance. I can be reached at research@cpp.com. Best of luck in your work!

Sincerely,

Nancy Schaubhut, M.S.
Senior Research Associate

Appendix C: CPP Data Extraction Request

CPP Data Extraction Request

Complete the following form, and email to:
Email: research@cpp.com
For further information contact CPP's Customer Support at 1-800-624-1765.

Requestor's name: Michael Kelly	**CPP customer name**[1]**:** Michael Kelly
CPP account number: ***If you do not know your customer number, please contact Customer Support***	
CPP customer's mailing address: 6780 Red Reef St, Lake Worth, FL 33467	
CPP customer's phone number: 561-865-6807	
Requestor's e-mail address:	
Please provide a description of the data extraction you require: 1) archival TKI dataset, including demographics, item responses, and TKI scores for approximately 10,000 individuals who have completed the assessment more than once; 2) archival "TKI dataset of approximately 100,000 additional individuals.	
Please indicate your preference for format of the data file (check one): ☐ SPSS Data File (.sav) ☒ Excel (.xls)	**Which assessment(s) are you requesting?** ☐ MBTI® Step I™ Form M ☐ MBTI® Step II™ Form Q ☐ MBTI®Complete ☐ Strong Interest Inventory® (2004) ☐ FIRO-B® ☐ FIRO Business® ☒ TKI ☐ CPI 260® ☐ CPI™ 434 ☐ Skills Confidence Inventory ☐ Other (please specify) _____
Please indicate website where assessments were completed: ☐ SkillsOne.com ☐ Elevate.com ☐ both	

Acknowledgement of CPP's Intellectual Property: Customer agrees that CPP is the sole and exclusive owner (or licensee of the owner, as the case may be) of all instruments on the Elevate® or SkillsOne® websites ("**Instruments**") and all of the intellectual property embodied or arising in those Instruments (including, but not limited to, all copyrights -- and renewals, extensions and/or continuations thereof – trade secrets, trademarks, service marks and logos used in connection with the Instruments) and the data associated with the administrations of those Instruments, particularly those data created via or derived from the Elevate® or SkillsOne® websites. Nothing contained in this agreement is intended to or shall be construed as granting Customer any proprietary or intellectual property right, or any right, title to or interest in the Instruments, their scoring, or any associated data. Customer agrees that it will not use data provided pursuant to this request for any purpose other than Customer's internal business analysis purposes. Customer will not reverse engineer the scoring or other proprietary aspects of the Instruments or the Elevate® or SkillsOne® websites. Customer will not publish Instruments, their scoring, or their reports in any form for any reason whatsoever. Violation of this acknowledgement will be a violation of United States copyright law. Customer will not use any personal information received under this Data Extraction Request in any unlawful manner.

Limitation of Liability: Customer understands and agrees CPP's liability to Customer, regardless of legal theory shall be limited to direct damages and shall not in any circumstance exceed the return of the amount of fees paid to CPP under this agreement. Under no circumstances shall CPP be liable for special, indirect, incidental, or consequential damages incurred by Customer. CPP cannot and shall not be liable to Customer under any legal theory for Customer's decisions based on information provided in the services or deliverables nor for any negative impact on business processes from recommended organizational development strategies.

Customer's Signature:	MKelly
Date:	03/22/2017
Special Notes or Requirements:	

[1] This is the CPP customer who is qualified to purchase assessments on Elevate® or SkillsOne®.

Appendix D: TKI Pre-Survey Profile Questions

Table E1

Variable Names and Descriptions and available Response Values for TKI Pre-Survey Demographic Profile Questions Presented to Participant to be Optionally Completed Before Completing the TKI Survey.

Variable Name	Variable Description	Response Values
GENDER	Respondent's gender	F = Female; M = Male
ETH_AFRICAN	African American or Black	0 = Not endorsed; 1 = Endorsed
ETH_AMERICAN_INDIAN	American Indian or Alaskan Native	0 = Not endorsed; 1 = Endorsed
ETH_ASIAN	Asian	0 = Not endorsed; 1 = Endorsed
ETH_CAUCASIAN	Caucasian or White	0 = Not endorsed; 1 = Endorsed
ETH_INDIAN	Indian - from Indian subcontinent	0 = Not endorsed; 1 = Endorsed
ETH_LATIN	Latino, Latina or Hispanic	0 = Not endorsed; 1 = Endorsed
ETH_MIDEAST	Middle Easterner - from Middle East or North Africa	0 = Not endorsed; 1 = Endorsed
ETH_OTHER	Other	0 = Not endorsed; 1 = Endorsed
ETH_PACIFIC	Native Hawaiian or Pacific Islander	0 = Not endorsed; 1 = Endorsed
ETH_OTHER_DESC	Description of other ethnicity	text
COUNTRY_ORIGIN	Country of origin	(List)
AGE	Respondent's age	Range from 10 to 99 years
ZIP_CODE	Zip code	text or numeric
PRESENT_STATUS	Present employment status	1 = Working full-time 2 = Working part-time 3 = Not working for income 4 = Retired 5 = Enrolled as a full-time student 6 = None of the above
REASON_FOR_ASSESSMENT	Reason for completing the assessment	1 = Training 2 = Employment testing 3 = Career counseling 4 = Education 5 = Personal growth
CURRENT_OCCUPATION_ CATEGORY	Employed respondent's occupation category	(List)

Table E1

Variable Names and Descriptions and available Response Values for TKI Pre-Survey Demographic Profile Questions Presented to Participant to be Optionally Completed Before Completing the TKI Survey.

Variable Name	Variable Description	Response Values
CURRENT_OCCUPATION_TITLE	Employed respondent's occupation title	(List)
NEW_OCCUPATION_CATEGORY	Job applicant's occupation category	(List)
NEW_OCCUPATION_TITLE	Job applicant's occupation title	(List)
VOC_OCCUPATION_CATEGORY	Vocational goal occupation category	(List)
VOC_OCCUPATION_TITLE	Vocational goal occupation title	(List)
EDUCATION_LVL_GOAL	Respondent's education goal – item presented to students only	1 = High school diploma 2 = Trade/technical school degree 3 = Associate/Community college degree 4 = College coursework, not seeking degree 5 = Bachelor's degree 6 = Master's degree 7 = Professional degree (e.g., DDS, JD, MD) 8 = Doctorate (e.g., PhD, EdD)
EDUCATION_YRS_GOAL	Years spent working toward degree/diploma	Range from 0 to 46; 0 = Less than 1 year 46 = More than 45 years
EDUCATION_FEEL	Satisfaction with current major or course of study	0 = No response 1 = Very satisfied 2 = Satisfied 3 = Somewhat satisfied 4 = Somewhat dissatisfied 5 = Dissatisfied 6 = Very dissatisfied
CURRENT_WORK_YEARS	Years spent working in current occupation	Range from 0 to 46; 0 = Less than 1 year 46 = More than 45 years
CURRENT_WORK_FEEL	Satisfaction with current job	0 = No response 1 = Very satisfied 2 = Satisfied 3 = Somewhat satisfied 4 = Somewhat dissatisfied 5 = Dissatisfied 6 = Very dissatisfied
CURRENT_WORK_LEVEL	Organizational level of current job	1 = Entry-level employee 2 = Nonsupervisory employee

Table E1

Variable Names and Descriptions and available Response Values for TKI Pre-Survey Demographic Profile Questions Presented to Participant to be Optionally Completed Before Completing the TKI Survey.

Variable Name	Variable Description	Response Values
		3 = Supervisor 4 = Manager 5 = Executive 6 = Top executive
NEW_WORK_LEVEL	Job applicant's level of job applied for	1 = Entry-level employee 2 = Nonsupervisory employee 3 = Supervisor 4 = Manager 5 = Executive 6 = Top executive
NEW_WORK_YEARS	Job applicant's number of years in occupation applied for	Range from 0 to 46; 0 = Less than 1 year 46 = More than 45 years
EDUCATION_LVL_COMPLETED	Respondent's highest level of education completed	1 = Some high school 2 = High school diploma/GED 3 = Trade/technical training 4 = Some college - no degree 5 = Associate/Community college degree 6 = Bachelor's degree 7 = Master's degree 8 = Professional degree (e.g., DDS, JD, MD) 9 = Doctorate (e.g., PhD, EdD)
COUNTRY_RESIDENCE	Country of residence	(List)
LANG_ENGLISH	Speak language fluently	0 = Not endorsed; 1 = Endorsed
LANG_CANTONESE	Speak language fluently	0 = Not endorsed; 1 = Endorsed
LANG_DANISH	Speak language fluently	0 = Not endorsed; 1 = Endorsed
LANG_DUTCH	Speak language fluently	0 = Not endorsed; 1 = Endorsed
LANG_FINNISH	Speak language fluently	0 = Not endorsed; 1 = Endorsed
LANG_FRENCH	Speak language fluently	0 = Not endorsed; 1 = Endorsed
LANG_GERMAN	Speak language fluently	0 = Not endorsed; 1 = Endorsed
LANG_HINDI	Speak language fluently	0 = Not endorsed; 1 = Endorsed
LANG_ITALIAN	Speak language fluently	0 = Not endorsed; 1 = Endorsed
LANG_JAPANESE	Speak language fluently	0 = Not endorsed; 1 = Endorsed
LANG_KOREAN	Speak language fluently	0 = Not endorsed; 1 = Endorsed
LANG_MANDARIN	Speak language fluently	0 = Not endorsed; 1 = Endorsed
LANG_NORWEGIAN	Speak language fluently	0 = Not endorsed; 1 = Endorsed
LANG_PORTUGUESE	Speak language fluently	0 = Not endorsed; 1 = Endorsed

Table E1

Variable Names and Descriptions and available Response Values for TKI Pre-Survey Demographic Profile Questions Presented to Participant to be Optionally Completed Before Completing the TKI Survey.

Variable Name	Variable Description	Response Values
LANG_RUSSIAN	Speak language fluently	0 = Not endorsed; 1 = Endorsed
LANG_NASPANISH	Speak language fluently	0 = Not endorsed; 1 = Endorsed
LANG_CASPANISH	Speak language fluently	0 = Not endorsed; 1 = Endorsed
LANG_SWEDISH	Speak language fluently	0 = Not endorsed; 1 = Endorsed
LANG_OTHER	Speak language fluently	0 = Not endorsed; 1 = Endorsed
LANG_OTHER_DESC	Other language speak fluently	Text
EDUCATION_YRS_COMPLETED	Years of education completed (since age 15)	Range from 0 to 46; 0 = Less than 1 year 46 = More than 45 years
EDUCATION_MAJOR	Educational major or concentration	See Appendix B
EDUCATION_YRS_ADDITIONAL	Additional years of education planned	Range from 0 to 46; 0 = Less than 1 year 46 = More than 45 years
EDUCATION_OCCUPATION_INDUSTRY	Student's industry of most interest	1 = Agriculture, Forestry, Fishing; 2 = Mining; 3 = Construction; 4 = Manufacturing; 5 = Wholesale Trade; 6 = Retail Trade; 7 = Finance, Insurance, Real Estate; 8 = Professional, Scientific, Technical Services; 9 = Personal Care, Other Services; 10 = Transportation, Electric, Gas, Sanitary Services; 11 = Information Systems & Technology; 12 = Information, Media, Communications; 13 = Healthcare, Pharmaceuticals; 14 = Other
EDUCATION_OCCUPATION_SECTOR	Student's sector of most interest	1 = Government; 2 = Private/For profit; 3 = Non-profit/NGO; 4 = Military; 5 = Education; 6 = Other

Table E1

Variable Names and Descriptions and available Response Values for TKI Pre-Survey Demographic Profile Questions Presented to Participant to be Optionally Completed Before Completing the TKI Survey.

Variable Name	Variable Description	Response Values
CURRENT_OCCUPATION_INDUSTRY	Industry of current employer	1 = Agriculture, Forestry, Fishing; 2 = Mining; 3 = Construction; 4 = Manufacturing; 5 = Wholesale Trade; 6 = Retail Trade; 7 = Finance, Insurance, Real Estate; 8 = Professional, Scientific, Technical Services; 9 = Personal Care, Other Services; 10 = Transportation, Electric, Gas, Sanitary Services; 11 = Information Systems & Technology; 12 = Information, Media, Communications; 13 = Healthcare, Pharmaceuticals; 14 = Other
CURRENT_OCCUPATION_SECTOR	Sector of current employer	1 = Government; 2 = Private/For profit; 3 = Non-profit/NGO; 4 = Military; 5 = Education; 6 = Other
CURRENT_OCCUPATION_TURNOVR	Likelihood of leaving job within year	1 = Very likely 2 = Somewhat likely 3 = Neither likely nor unlikely 4 = Somewhat unlikely 5 = Very unlikely
NEW_OCCUPATION_INDUSTRY	Industry of organization to which job applicant is applying	1 = Agriculture, Forestry, Fishing; 2 = Mining; 3 = Construction; 4 = Manufacturing; 5 = Wholesale Trade; 6 = Retail Trade; 7 = Finance, Insurance, Real Estate; 8 = Professional, Scientific, Technical Services; 9 = Personal Care, Other Services; 10 = Transportation, Electric, Gas, Sanitary Services; 11 = Information Systems & Technology;

Table E1

Variable Names and Descriptions and available Response Values for TKI Pre-Survey Demographic Profile Questions Presented to Participant to be Optionally Completed Before Completing the TKI Survey.

Variable Name	Variable Description	Response Values
		12 = Information, Media, Communications; 13 = Healthcare, Pharmaceuticals; 14 = Other
NEW_OCCUPATION_SECTOR	Sector of organization to which job applicant is applying	1 = Government; 2 = Private/For profit; 3 = Non-profit/NGO; 4 = Military; 5 = Education; 6 = Other
VOC_OCCUPATION_INDUSTRY	Respondent's industry of most interest	1 = Agriculture, Forestry, Fishing; 2 = Mining; 3 = Construction; 4 = Manufacturing; 5 = Wholesale Trade; 6 = Retail Trade; 7 = Finance, Insurance, Real Estate; 8 = Professional, Scientific, Technical Services; 9 = Personal Care, Other Services; 10 = Transportation, Electric, Gas, Sanitary Services; 11 = Information Systems & Technology; 12 = Information, Media, Communications; 13 = Healthcare, Pharmaceuticals; 14 = Other
VOC_OCCUPATION_SECTOR	Respondent's sector of most interest	1 = Government; 2 = Private/For profit; 3 = Non-profit/NGO; 4 = Military; 5 = Education; 6 = Other
DATE_UPDATED	Date of assessment	MM/DD/YY
VIRTUAL_WORK	Percentage time spent working in a remote or home office	1= 0 - 10% 2 = 11 - 20% 3 = 21 - 30% 4 = 31 - 40% 5 = 41 - 50% 6 = 51 - 60%

Table E1

Variable Names and Descriptions and available Response Values for TKI Pre-Survey Demographic Profile Questions Presented to Participant to be Optionally Completed Before Completing the TKI Survey.

Variable Name	Variable Description	Response Values
		7 = 61 - 70%
		8 = 71 - 80%
		9 = 81 - 90%
		10 = 91 - 100%

Appendix E: SPSS Commands

The following SPSS Syntax commands were executed to generate the output presented in the study Results section.

```
* First Assessment = PreCE
* Second Assessment = PostCE
*Percentage of conflict style by PreCE and PostCE populations
DATASET ACTIVATE DataSet2. FILTER OFF.
USE ALL.

* Chart Builder.
GGRAPH
  /GRAPHDATASET NAME="graphdataset" VARIABLES=ConflictStyle MAXIMUM(PreCE) MAXIMUM(PostCE)
MISSING=LISTWISE REPORTMISSING=NO
    TRANSFORM=VARSTOCASES(SUMMARY="#SUMMARY" INDEX="#INDEX")
  /GRAPHSPEC SOURCE=INLINE INLINETEMPLATE=["<addDataLabels colorByMarker='false'
connectingLines='false' hidden='true' labelLocationHorizontal='center' labelLocationVertical='positive'
showCollidingLabels='true'><style color='#000000' font-size='8pt' font-style='regular' font-
weight='regular' number='0' padding='2px' visible='visible'/>              <style color='#ffffff'
color2='#000000' coordinate='1' number='1' visible='true'/>              <labeling variable='y'/>
          <labeling variable='y'>                          <format maximumFractionDigits='1'
minimumFractionDigits='1' useGrouping='true'/>                  </labeling>          </addDataLabels>"].
BEGIN GPL
  SOURCE: s=userSource(id("graphdataset"))
  DATA: ConflictStyle=col(source(s), name("ConflictStyle"), unit.category())
  DATA: SUMMARY=col(source(s), name("#SUMMARY"))
  DATA: INDEX=col(source(s), name("#INDEX"), unit.category())
  COORD: rect(dim(1,2), cluster(3,0))
  GUIDE: axis(dim(3), label("ConflictStyle"))
  GUIDE: axis(dim(2), label("Percent of Sample Population"))
  GUIDE: legend(aesthetic(aesthetic.color.interior), label("Conflict Style"))
  GUIDE: text.title(label("Conflict Style as Percent of Sample Population"))
  SCALE: cat(dim(3), include("1", "2", "3", "4", "5"))
  SCALE: linear(dim(2), include(0))
  SCALE: cat(aesthetic(aesthetic.color.interior), include("0", "1"))
  SCALE: cat(dim(1), include("0", "1"))
  ELEMENT: interval(position(INDEX*SUMMARY*ConflictStyle), color.interior(INDEX),
shape.interior(shape.square))
END GPL.

*Participant PreCE-to-PostCE dataset
DATASET ACTIVATE DataSet1.
FILTER OFF.
USE ALL.

FREQUENCIES VARIABLES=PreCEConflictStyle
  /PIECHART PERCENT
  /ORDER=ANALYSIS.
```

```
FREQUENCIES VARIABLES=PostCEConflictStyle
  /PIECHART PERCENT
  /ORDER=ANALYSIS.ss

FREQUENCIES VARIABLES=TimeBetweenAssessments
  /PIECHART PERCENT
  /ORDER=ANALYSIS.

FREQUENCIES VARIABLES=ReasonForAssessment
  /PIECHART PERCENT
  /ORDER=ANALYSIS.

FREQUENCIES VARIABLES=Age
  /PIECHART PERCENT
  /ORDER=ANALYSIS.

FREQUENCIES VARIABLES=WorkLevel
  /PIECHART PERCENT
  /ORDER=ANALYSIS.

FREQUENCIES VARIABLES=EducationLevel
  /PIECHART PERCENT
  /ORDER=ANALYSIS.

FREQUENCIES VARIABLES=PostCEChangedToConflictStyle
  /PIECHART PERCENT
  /ORDER=ANALYSIS.

FREQUENCIES VARIABLES=ConflictStyleChanged
  /PIECHART PERCENT
  /ORDER=ANALYSIS.

CROSSTABS
  /TABLES=ConflictStyleChanged BY TimeBetweenAssessments
  /FORMAT=AVALUE TABLES
  /CELLS=COUNT
  /COUNT ROUND CELL.
GGRAPH
  /GRAPHDATASET NAME="graphdataset" VARIABLES=TimeBetweenAssessments
COUNT()[name="COUNT"] ConflictStyleChanged MISSING=LISTWISE REPORTMISSING=NO
  /GRAPHSPEC SOURCE=INLINE.
BEGIN GPL
  SOURCE: s=userSource(id("graphdataset"))
  DATA: TimeBetweenAssessments=col(source(s), name("TimeBetweenAssessments"), unit.category())
  DATA: COUNT=col(source(s), name("COUNT"))
  DATA: ConflictStyleChanged=col(source(s), name("ConflictStyleChanged"), unit.category())
  COORD: rect(dim(1,2), cluster(3,0))
  GUIDE: axis(dim(3), label("TimeBetweenAssessments"))
  GUIDE: axis(dim(2), label("Percent"))
```

```
  GUIDE: legend(aesthetic(aesthetic.color.interior), label("ConflictStyleChanged"))
  SCALE: linear(dim(2), include(0))
  SCALE: cat(aesthetic(aesthetic.color.interior), include("0", "1"))
  SCALE: cat(dim(1), include("0", "1"))
  ELEMENT: interval(position(summary.percent(ConflictStyleChanged*COUNT*TimeBetweenAssessments,
base.all(acrossPanels()))), color.interior(ConflictStyleChanged), shape.interior(shape.square))
END GPL.

CROSSTABS
  /TABLES=ConflictStyleChanged BY ReasonForAssessment
  /FORMAT=AVALUE TABLES
  /CELLS=COUNT
  /COUNT ROUND CELL.
GGRAPH
  /GRAPHDATASET NAME="graphdataset" VARIABLES=ReasonForAssessment COUNT()[name="COUNT"]
ConflictStyleChanged MISSING=LISTWISE REPORTMISSING=NO
  /GRAPHSPEC SOURCE=INLINE.
BEGIN GPL
  SOURCE: s=userSource(id("graphdataset"))
  DATA: ReasonForAssessment=col(source(s), name("ReasonForAssessment"), unit.category())
  DATA: COUNT=col(source(s), name("COUNT"))
  DATA: ConflictStyleChanged=col(source(s), name("ConflictStyleChanged"), unit.category())
  COORD: rect(dim(1,2), cluster(3,0))
  GUIDE: axis(dim(3), label("ReasonForAssessment"))
  GUIDE: axis(dim(2), label("Percent"))
  GUIDE: legend(aesthetic(aesthetic.color.interior), label("ConflictStyleChanged"))
  SCALE: linear(dim(2), include(0))
  SCALE: cat(aesthetic(aesthetic.color.interior), include("0", "1"))
  SCALE: cat(dim(1), include("0", "1"))
  ELEMENT: interval(position(summary.percent(ConflictStyleChanged*COUNT*ReasonForAssessment,
base.all(acrossPanels()))), color.interior(ConflictStyleChanged), shape.interior(shape.square))
END GPL.

CROSSTABS
  /TABLES=ConflictStyleChanged BY Age
  /FORMAT=AVALUE TABLES
  /CELLS=COUNT
  /COUNT ROUND CELL.
GGRAPH
  /GRAPHDATASET NAME="graphdataset" VARIABLES=Age COUNT()[name="COUNT"]
ConflictStyleChanged MISSING=LISTWISE REPORTMISSING=NO
  /GRAPHSPEC SOURCE=INLINE.
BEGIN GPL
  SOURCE: s=userSource(id("graphdataset"))
  DATA: Age=col(source(s), name("Age"), unit.category())
  DATA: COUNT=col(source(s), name("COUNT"))
  DATA: ConflictStyleChanged=col(source(s), name("ConflictStyleChanged"), unit.category())
  COORD: rect(dim(1,2), cluster(3,0))
  GUIDE: axis(dim(3), label("Age"))
  GUIDE: axis(dim(2), label("Percent"))
```

```
  GUIDE: legend(aesthetic(aesthetic.color.interior), label("ConflictStyleChanged"))
  SCALE: linear(dim(2), include(0))
  SCALE: cat(aesthetic(aesthetic.color.interior), include("0", "1"))
  SCALE: cat(dim(1), include("0", "1"))
  ELEMENT: interval(position(summary.percent(ConflictStyleChanged*COUNT*Age,
base.all(acrossPanels()))), color.interior(ConflictStyleChanged), shape.interior(shape.square))
END GPL.

CROSSTABS
  /TABLES=ConflictStyleChanged BY WorkLevel
  /FORMAT=AVALUE TABLES
  /CELLS=COUNT
  /COUNT ROUND CELL.
GGRAPH
  /GRAPHDATASET NAME="graphdataset" VARIABLES=WorkLevel COUNT()[name="COUNT"]
ConflictStyleChanged MISSING=LISTWISE REPORTMISSING=NO
  /GRAPHSPEC SOURCE=INLINE.
BEGIN GPL
  SOURCE: s=userSource(id("graphdataset"))
  DATA: WorkLevel=col(source(s), name("WorkLevel"), unit.category())
  DATA: COUNT=col(source(s), name("COUNT"))
  DATA: ConflictStyleChanged=col(source(s), name("ConflictStyleChanged"), unit.category())
  COORD: rect(dim(1,2), cluster(3,0))
  GUIDE: axis(dim(3), label("WorkLevel"))
  GUIDE: axis(dim(2), label("Percent"))
  GUIDE: legend(aesthetic(aesthetic.color.interior), label("ConflictStyleChanged"))
  SCALE: linear(dim(2), include(0))
  SCALE: cat(aesthetic(aesthetic.color.interior), include("0", "1"))
  SCALE: cat(dim(1), include("0", "1"))
  ELEMENT: interval(position(summary.percent(ConflictStyleChanged*COUNT*WorkLevel,
base.all(acrossPanels()))), color.interior(ConflictStyleChanged), shape.interior(shape.square))
END GPL.

CROSSTABS
  /TABLES=ConflictStyleChanged BY EducationLevel
  /FORMAT=AVALUE TABLES
  /CELLS=COUNT
  /COUNT ROUND CELL.
GGRAPH
  /GRAPHDATASET NAME="graphdataset" VARIABLES=EducationLevel COUNT()[name="COUNT"]
ConflictStyleChanged MISSING=LISTWISE REPORTMISSING=NO
  /GRAPHSPEC SOURCE=INLINE.
BEGIN GPL
  SOURCE: s=userSource(id("graphdataset"))
  DATA: EducationLevel=col(source(s), name("EducationLevel"), unit.category())
  DATA: COUNT=col(source(s), name("COUNT"))
  DATA: ConflictStyleChanged=col(source(s), name("ConflictStyleChanged"), unit.category())
  COORD: rect(dim(1,2), cluster(3,0))
  GUIDE: axis(dim(3), label("EducationLevel"))
  GUIDE: axis(dim(2), label("Percent"))
```

```
  GUIDE: legend(aesthetic(aesthetic.color.interior), label("ConflictStyleChanged"))
  SCALE: linear(dim(2), include(0))
  SCALE: cat(aesthetic(aesthetic.color.interior), include("0", "1"))
  SCALE: cat(dim(1), include("0", "1"))
  ELEMENT: interval(position(summary.percent(ConflictStyleChanged*COUNT*EducationLevel,
base.all(acrossPanels()))), color.interior(ConflictStyleChanged), shape.interior(shape.square))
END GPL.

CROSSTABS
  /TABLES=ConflictStyleChanged BY PreCEConflictStyle
  /FORMAT=AVALUE TABLES
  /CELLS=COUNT
  /COUNT ROUND CELL.
GGRAPH
  /GRAPHDATASET NAME="graphdataset" VARIABLES=PreCEConflictStyle COUNT()[name="COUNT"]
ConflictStyleChanged MISSING=LISTWISE REPORTMISSING=NO
  /GRAPHSPEC SOURCE=INLINE.
BEGIN GPL
  SOURCE: s=userSource(id("graphdataset"))
  DATA: PreCEConflictStyle=col(source(s), name("PreCEConflictStyle"), unit.category())
  DATA: COUNT=col(source(s), name("COUNT"))
  DATA: ConflictStyleChanged=col(source(s), name("ConflictStyleChanged"), unit.category())
  COORD: rect(dim(1,2), cluster(3,0))
  GUIDE: axis(dim(3), label("PreCEConflictStyle"))
  GUIDE: axis(dim(2), label("Percent"))
  GUIDE: legend(aesthetic(aesthetic.color.interior), label("ConflictStyleChanged"))
  SCALE: linear(dim(2), include(0))
  SCALE: cat(aesthetic(aesthetic.color.interior), include("0", "1"))
  SCALE: cat(dim(1), include("0", "1"))
  ELEMENT: interval(position(summary.percent(ConflictStyleChanged*COUNT*PreCEConflictStyle,
base.all(acrossPanels()))), color.interior(ConflictStyleChanged), shape.interior(shape.square))
END GPL.

CROSSTABS
  /TABLES=PostCEChangedToConflictStyle BY PreCEConflictStyle
  /FORMAT=AVALUE TABLES
  /CELLS=COUNT
  /COUNT ROUND CELL.
GGRAPH
  /GRAPHDATASET NAME="graphdataset" VARIABLES=PreCEConflictStyle COUNT()[name="COUNT"]
PostCEChangedToConflictStyle MISSING=LISTWISE REPORTMISSING=NO
  /GRAPHSPEC SOURCE=INLINE.
BEGIN GPL
  SOURCE: s=userSource(id("graphdataset"))
  DATA: PreCEConflictStyle=col(source(s), name("PreCEConflictStyle"), unit.category())
  DATA: COUNT=col(source(s), name("COUNT"))
  DATA: PostCEChangedToConflictStyle=col(source(s), name("PostCEChangedToConflictStyle"),
unit.category())
  COORD: rect(dim(1,2), cluster(3,0))
  GUIDE: axis(dim(3), label("PreCEConflictStyle"))
```

```
  GUIDE: axis(dim(2), label("Percent"))
  GUIDE: legend(aesthetic(aesthetic.color.interior), label("PostCEChangedToConflictStyle"))
  SCALE: linear(dim(2), include(0))
  SCALE: cat(aesthetic(aesthetic.color.interior), include("0", "1"))
  SCALE: cat(dim(1), include("0", "1"))
  ELEMENT:
interval(position(summary.percent(PostCEChangedToConflictStyle*COUNT*PreCEConflictStyle,
base.all(acrossPanels()))), color.interior(PostCEChangedToConflictStyle), shape.interior(shape.square))
END GPL.

* Chart Builder.
GGRAPH
  /GRAPHDATASET NAME="graphdataset" VARIABLES=COUNT()[name="COUNT"]
TimeBetweenAssessments ConflictStyleChanged MISSING=LISTWISE REPORTMISSING=NO
  /GRAPHSPEC SOURCE=INLINE INLINETEMPLATE=["<addDataLabels><style color='#000000' font-size='9pt'
font-style='regular' font-weight='bold' number='0' padding='2px' visible='visible'/><labeling
variable='count'></labeling></addDataLabels>"].
BEGIN GPL
  SOURCE: s=userSource(id("graphdataset"))
  DATA: COUNT=col(source(s), name("COUNT"))
  DATA: TimeBetweenAssessments=col(source(s), name("TimeBetweenAssessments"), unit.category())
  DATA: ConflictStyleChanged=col(source(s), name("ConflictStyleChanged"), unit.category())
  COORD: transpose(mirror(rect(dim(1,2))))
  GUIDE: axis(dim(1), label("TimeBetweenAssessments"))
  GUIDE: axis(dim(3), label(""), opposite(), gap(0px))
  GUIDE: legend(aesthetic(aesthetic.color), null())
  GUIDE: text.title(label(""))
  SCALE: cat(dim(1), include("0", "1", "2", "3", "4", "5"))
  SCALE: cat(dim(3), include("0", "1"))
  ELEMENT: interval(position(TimeBetweenAssessments*COUNT*ConflictStyleChanged),
    color.interior(ConflictStyleChanged))
END GPL.


* Chart Builder.
GGRAPH
  /GRAPHDATASET NAME="graphdataset" VARIABLES=COUNT()[name="COUNT"] ReasonForAssessment
ConflictStyleChanged MISSING=LISTWISE REPORTMISSING=NO
  /GRAPHSPEC SOURCE=INLINE INLINETEMPLATE=["<addDataLabels><style color='#000000' font-size='9pt'
font-style='regular' font-weight='bold' number='0' padding='2px' visible='visible'/><labeling
variable='count'></labeling></addDataLabels>"].
BEGIN GPL
  SOURCE: s=userSource(id("graphdataset"))
  DATA: COUNT=col(source(s), name("COUNT"))
  DATA: ReasonForAssessment=col(source(s), name("ReasonForAssessment"), unit.category())
  DATA: ConflictStyleChanged=col(source(s), name("ConflictStyleChanged"), unit.category())
  COORD: transpose(mirror(rect(dim(1,2))))
  GUIDE: axis(dim(1), label("ReasonForAssessment"))
  GUIDE: axis(dim(3), label(""), opposite(), gap(0px))
  GUIDE: legend(aesthetic(aesthetic.color), null())
```

```
  GUIDE: text.title(label(""))
  SCALE: cat(dim(1), include("0", "1", "2", "3", "4", "5"))
  SCALE: cat(dim(3), include("0", "1"))
  ELEMENT: interval(position(ReasonForAssessment*COUNT*ConflictStyleChanged),
    color.interior(ConflictStyleChanged))
END GPL.

* Chart Builder.
GGRAPH
  /GRAPHDATASET NAME="graphdataset" VARIABLES=COUNT()[name="COUNT"] Age
ConflictStyleChanged MISSING=LISTWISE REPORTMISSING=NO
  /GRAPHSPEC SOURCE=INLINE INLINETEMPLATE=["<addDataLabels><style color='#000000' font-size='9pt'
font-style='regular' font-weight='bold' number='0' padding='2px' visible='visible'/><labeling
variable='count'></labeling></addDataLabels>"].
BEGIN GPL
  SOURCE: s=userSource(id("graphdataset"))
  DATA: COUNT=col(source(s), name("COUNT"))
  DATA: Age=col(source(s), name("Age"), unit.category())
  DATA: ConflictStyleChanged=col(source(s), name("ConflictStyleChanged"), unit.category())
  COORD: transpose(mirror(rect(dim(1,2))))
  GUIDE: axis(dim(1), label("Age"))
  GUIDE: axis(dim(3), label(""), opposite(), gap(0px))
  GUIDE: legend(aesthetic(aesthetic.color), null())
  GUIDE: text.title(label(""))
  SCALE: cat(dim(1), include("0", "1", "2", "3", "4", "5", "6"))
  SCALE: cat(dim(3), include("0", "1"))
  ELEMENT: interval(position(Age*COUNT*ConflictStyleChanged),
    color.interior(ConflictStyleChanged))
END GPL.

* Chart Builder.
GGRAPH
  /GRAPHDATASET NAME="graphdataset" VARIABLES=COUNT()[name="COUNT"] WorkLevel
ConflictStyleChanged MISSING=LISTWISE REPORTMISSING=NO
  /GRAPHSPEC SOURCE=INLINE INLINETEMPLATE=["<addDataLabels><style color='#000000' font-size='9pt'
font-style='regular' font-weight='bold' number='0' padding='2px' visible='visible'/><labeling
variable='count'></labeling></addDataLabels>"].
BEGIN GPL
  SOURCE: s=userSource(id("graphdataset"))
  DATA: COUNT=col(source(s), name("COUNT"))
  DATA: WorkLevel=col(source(s), name("WorkLevel"), unit.category())
  DATA: ConflictStyleChanged=col(source(s), name("ConflictStyleChanged"), unit.category())
  COORD: transpose(mirror(rect(dim(1,2))))
  GUIDE: axis(dim(1), label("WorkLevel"))
  GUIDE: axis(dim(3), label(""), opposite(), gap(0px))
  GUIDE: legend(aesthetic(aesthetic.color), null())
  GUIDE: text.title(label(""))
  SCALE: cat(dim(1), include("0", "1", "2", "3", "4", "5", "6"))
  SCALE: cat(dim(3), include("0", "1"))
  ELEMENT: interval(position(WorkLevel*COUNT*ConflictStyleChanged),
```

```
   color.interior(ConflictStyleChanged))
END GPL.

* Chart Builder.
GGRAPH
  /GRAPHDATASET NAME="graphdataset" VARIABLES=COUNT()[name="COUNT"] EducationLevel
ConflictStyleChanged MISSING=LISTWISE REPORTMISSING=NO
  /GRAPHSPEC SOURCE=INLINE INLINETEMPLATE=["<addDataLabels><style color='#000000' font-size='9pt'
font-style='regular' font-weight='bold' number='0' padding='2px' visible='visible'/><labeling
variable='count'></labeling></addDataLabels>"].
BEGIN GPL
  SOURCE: s=userSource(id("graphdataset"))
  DATA: COUNT=col(source(s), name("COUNT"))
  DATA: EducationLevel=col(source(s), name("EducationLevel"), unit.category())
  DATA: ConflictStyleChanged=col(source(s), name("ConflictStyleChanged"), unit.category())
  COORD: transpose(mirror(rect(dim(1,2))))
  GUIDE: axis(dim(1), label("EducationLevel"))
  GUIDE: axis(dim(3), label(""), opposite(), gap(0px))
  GUIDE: legend(aesthetic(aesthetic.color), null())
  GUIDE: text.title(label(""))
  SCALE: cat(dim(1), include("0", "1", "2", "3", "4", "5", "6", "7", "8"))
  SCALE: cat(dim(3), include("0", "1"))
  ELEMENT: interval(position(EducationLevel*COUNT*ConflictStyleChanged),
    color.interior(ConflictStyleChanged))
END GPL.

* Chart Builder.
GGRAPH
  /GRAPHDATASET NAME="graphdataset" VARIABLES=COUNT()[name="COUNT"] PreCEConflictStyle
ConflictStyleChanged MISSING=LISTWISE REPORTMISSING=NO
  /GRAPHSPEC SOURCE=INLINE INLINETEMPLATE=["<addDataLabels><style color='#000000' font-size='9pt'
font-style='regular' font-weight='bold' number='0' padding='2px' visible='visible'/><labeling
variable='count'></labeling></addDataLabels>"].
BEGIN GPL
  SOURCE: s=userSource(id("graphdataset"))
  DATA: COUNT=col(source(s), name("COUNT"))
  DATA: PreCEConflictStyle=col(source(s), name("PreCEConflictStyle"), unit.category())
  DATA: ConflictStyleChanged=col(source(s), name("ConflictStyleChanged"), unit.category())
  COORD: transpose(mirror(rect(dim(1,2))))
  GUIDE: axis(dim(1), label("PreCE conflict style"))
  GUIDE: axis(dim(3), label(""), opposite(), gap(0px))
  GUIDE: legend(aesthetic(aesthetic.color), null())
  GUIDE: text.title(label(""))
  SCALE: cat(dim(1), include("1", "2", "3", "4", "5"))
  SCALE: cat(dim(3), include("0", "1"))
  ELEMENT: interval(position(PreCEConflictStyle*COUNT*ConflictStyleChanged),
    color.interior(ConflictStyleChanged))
END GPL.
```

```
DATASET ACTIVATE DataSet1.
FILTER OFF.
USE ALL.

LOGISTIC REGRESSION VARIABLES ConflictStyleChanged
  /METHOD=ENTER PreCEConflictStyle
  /PRINT=GOODFIT SUMMARY CI(95)
  /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).

LOGISTIC REGRESSION VARIABLES ConflictStyleChanged
  /METHOD=ENTER TimeBetweenAssessments ReasonForAssessment Age WorkLevel EducationLevel
  /CONTRAST (TimeBetweenAssessments)=Indicator
  /CONTRAST (ReasonForAssessment)=Indicator
  /CONTRAST (Age)=Indicator
  /CONTRAST (WorkLevel)=Indicator
  /CONTRAST (EducationLevel)=Indicator
  /PRINT=GOODFIT SUMMARY CI(95)
  /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).

LOGISTIC REGRESSION VARIABLES ConflictStyleChanged
  /METHOD=ENTER PreCEConflictStyle
  /CONTRAST (PreCEConflictStyle)=Indicator
  /PRINT=GOODFIT SUMMARY CI(95)
  /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).

LOGISTIC REGRESSION VARIABLES ConflictStyleChanged
  /METHOD=ENTER PreCEConflictStyle
  /CONTRAST (PreCEConflictStyle)=Indicator(4)
  /PRINT=GOODFIT SUMMARY CI(95)
  /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).

LOGISTIC REGRESSION VARIABLES ConflictStyleChanged
  /SELECT=PreCEConflictStyle EQ 1
  /METHOD=ENTER TimeBetweenAssessments ReasonForAssessment Age WorkLevel EducationLevel
  /CONTRAST (TimeBetweenAssessments)=Indicator
  /CONTRAST (ReasonForAssessment)=Indicator
  /CONTRAST (Age)=Indicator
  /CONTRAST (WorkLevel)=Indicator
  /CONTRAST (EducationLevel)=Indicator
  /PRINT=GOODFIT SUMMARY CI(95)
  /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).

LOGISTIC REGRESSION VARIABLES ConflictStyleChanged
  /SELECT=PreCEConflictStyle EQ 1
  /METHOD=ENTER TimeBetweenAssessments ReasonForAssessment Age WorkLevel EducationLevel
  /CONTRAST (TimeBetweenAssessments)=Indicator(1)
  /CONTRAST (ReasonForAssessment)=Indicator(1)
  /CONTRAST (Age)=Indicator(1)
  /CONTRAST (WorkLevel)=Indicator(1)
  /CONTRAST (EducationLevel)=Indicator(1)
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```
  /PRINT=GOODFIT SUMMARY CI(95)
  /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).

LOGISTIC REGRESSION VARIABLES ConflictStyleChanged
  /SELECT=PreCEConflictStyle EQ 2
  /METHOD=ENTER TimeBetweenAssessments ReasonForAssessment Age WorkLevel EducationLevel
  /CONTRAST (TimeBetweenAssessments)=Indicator
  /CONTRAST (ReasonForAssessment)=Indicator
  /CONTRAST (Age)=Indicator
  /CONTRAST (WorkLevel)=Indicator
  /CONTRAST (EducationLevel)=Indicator
  /PRINT=GOODFIT SUMMARY CI(95)
  /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).

LOGISTIC REGRESSION VARIABLES ConflictStyleChanged
  /SELECT=PreCEConflictStyle EQ 2
  /METHOD=ENTER TimeBetweenAssessments ReasonForAssessment Age WorkLevel EducationLevel
  /CONTRAST (TimeBetweenAssessments)=Indicator(1)
  /CONTRAST (ReasonForAssessment)=Indicator(1)
  /CONTRAST (Age)=Indicator(1)
  /CONTRAST (WorkLevel)=Indicator(1)
  /CONTRAST (EducationLevel)=Indicator(1)
  /PRINT=GOODFIT SUMMARY CI(95)
  /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).

LOGISTIC REGRESSION VARIABLES ConflictStyleChanged
  /SELECT=PreCEConflictStyle EQ 3
  /METHOD=ENTER TimeBetweenAssessments ReasonForAssessment Age WorkLevel EducationLevel
  /CONTRAST (TimeBetweenAssessments)=Indicator
  /CONTRAST (ReasonForAssessment)=Indicator
  /CONTRAST (Age)=Indicator
  /CONTRAST (WorkLevel)=Indicator
  /CONTRAST (EducationLevel)=Indicator
  /PRINT=GOODFIT SUMMARY CI(95)
  /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).

LOGISTIC REGRESSION VARIABLES ConflictStyleChanged
  /SELECT=PreCEConflictStyle EQ 3
  /METHOD=ENTER TimeBetweenAssessments ReasonForAssessment Age WorkLevel EducationLevel
  /CONTRAST (TimeBetweenAssessments)=Indicator(1)
  /CONTRAST (ReasonForAssessment)=Indicator(1)
  /CONTRAST (Age)=Indicator(1)
  /CONTRAST (WorkLevel)=Indicator(1)
  /CONTRAST (EducationLevel)=Indicator(1)
  /PRINT=GOODFIT SUMMARY CI(95)
  /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).

LOGISTIC REGRESSION VARIABLES ConflictStyleChanged
  /SELECT=PreCEConflictStyle EQ 4
  /METHOD=ENTER TimeBetweenAssessments ReasonForAssessment Age WorkLevel EducationLevel
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  /CONTRAST (TimeBetweenAssessments)=Indicator
  /CONTRAST (ReasonForAssessment)=Indicator
  /CONTRAST (Age)=Indicator
  /CONTRAST (WorkLevel)=Indicator
  /CONTRAST (EducationLevel)=Indicator
  /PRINT=GOODFIT SUMMARY CI(95)
  /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).

LOGISTIC REGRESSION VARIABLES ConflictStyleChanged
  /SELECT=PreCEConflictStyle EQ 4
  /METHOD=ENTER TimeBetweenAssessments ReasonForAssessment Age WorkLevel EducationLevel
  /CONTRAST (TimeBetweenAssessments)=Indicator(1)
  /CONTRAST (ReasonForAssessment)=Indicator(1)
  /CONTRAST (Age)=Indicator(1)
  /CONTRAST (WorkLevel)=Indicator(1)
  /CONTRAST (EducationLevel)=Indicator(1)
  /PRINT=GOODFIT SUMMARY CI(95)
  /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).

LOGISTIC REGRESSION VARIABLES ConflictStyleChanged
  /SELECT=PreCEConflictStyle EQ 5
  /METHOD=ENTER TimeBetweenAssessments ReasonForAssessment Age WorkLevel EducationLevel
  /CONTRAST (TimeBetweenAssessments)=Indicator
  /CONTRAST (ReasonForAssessment)=Indicator
  /CONTRAST (Age)=Indicator
  /CONTRAST (WorkLevel)=Indicator
  /CONTRAST (EducationLevel)=Indicator
  /PRINT=GOODFIT SUMMARY CI(95)
  /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).

LOGISTIC REGRESSION VARIABLES ConflictStyleChanged
  /SELECT=PreCEConflictStyle EQ 5
  /METHOD=ENTER TimeBetweenAssessments ReasonForAssessment Age WorkLevel EducationLevel
  /CONTRAST (TimeBetweenAssessments)=Indicator(1)
  /CONTRAST (ReasonForAssessment)=Indicator(1)
  /CONTRAST (Age)=Indicator(1)
  /CONTRAST (WorkLevel)=Indicator(1)
  /CONTRAST (EducationLevel)=Indicator(1)
  /PRINT=GOODFIT SUMMARY CI(95)
  /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).

CROSSTABS
  /TABLES=TimeBetweenAssessments ReasonForAssessment Age WorkLevel EducationLevel
PreCEConflictStyle BY ConflictStyleChanged
  /FORMAT=AVALUE TABLES
  /CELLS=COUNT ROW COLUMN TOTAL
  /COUNT ROUND CELL.

CROSSTABS
```

```
  /TABLES=TimeBetweenAssessments ReasonForAssessment Age WorkLevel EducationLevel BY
ConflictStyleChanged BY PreCEConflictStyle
  /FORMAT=AVALUE TABLES
  /CELLS=COUNT TOTAL
  /COUNT ROUND CELL.
```

Appendix F: IRB Approval

MEMORANDUM

To: **Michael P Kelly**

From: **Ransford Edwards,**
Center Representative, Institutional Review Board

Date: **October 10, 2018**

Re: **IRB #: 2018-504; Title, "Conflict Style as a Trait or State: Quantitative Study of Exploring Whether Experience, Education and Training Can Change conflict style"**

I have reviewed the above-referenced research protocol at the center level. Based on the information provided, I have determined that this study is exempt from further IRB review under **45 CFR 46.101(b) (Exempt 4: Use of previously-collected records, data, specimens, tissues, etc.)**. You may proceed with your study as described to the IRB. As principal investigator, you must adhere to the following requirements:

1) CONSENT: If recruitment procedures include consent forms, they must be obtained in such a manner that they are clearly understood by the subjects and the process affords subjects the opportunity to ask questions, obtain detailed answers from those directly involved in the research, and have sufficient time to consider their participation after they have been provided this information. The subjects must be given a copy of the signed consent document, and a copy must be placed in a secure file separate from de-identified participant information. Record of informed consent must be retained for a minimum of three years from the conclusion of the study.

2) ADVERSE EVENTS/UNANTICIPATED PROBLEMS: The principal investigator is required to notify the IRB chair and me (954-262-5369 and Ransford Edwards, respectively) of any adverse reactions or unanticipated events that may develop as a result of this study. Reactions or events may include, but are not limited to, injury, depression as a result of participation in the study, life-threatening situation, death, or loss of confidentiality/anonymity of subject. Approval may be withdrawn if the problem is serious.

3) AMENDMENTS: Any changes in the study (e.g., procedures, number or types of subjects, consent forms, investigators, etc.) must be approved by the IRB prior to implementation. Please be advised that changes in a study may require further review depending on the nature of the change. Please contact me with any questions regarding amendments or changes to your study.

The NSU IRB is in compliance with the requirements for the protection of human subjects prescribed in Part 46 of Title 45 of the Code of Federal Regulations (45 CFR 46) revised June 18, 1991.

Cc: Elena P Bastidas, Ph.D.
Ransford Edwards

Appendix G: Definitions

Conflict competence is a broad collection of perceptions, skills, habits of behavior, processes and tools demonstrated to reflect positively on, or aid in achieving positive outcomes in conflict management and resolution exercises. For the purpose of this study no specific definition of the skills or other attributes of conflict competence are used. However, the acquisition of any perception, skill, process or tool that helps an individual to be more likely to effectively manage or resolve conflict would fall into the definition of conflict competence.

Context & culture. This study uses context to refer to a cumulative collection of present circumstances, as well as understanding and belief accumulated over time for an individual. This means that while two individuals may share the same space at the same time, their individual understanding and belief may result in very different behaviors. Conversely, the same individual may occupy the same space at two different times and have substantially changed behavior based on experience and belief held at the time of each instance. Context and culture are not used interchangeably. This study highlights the importance of an individual's specific collection of perspective, understanding, boundaries and experience as they inform, in the moment, upon conflict handling behavior. Culture can exist very broadly or very specifically for an individual. For example, national identity, race, religion, gender, sexual preference, and other factors may contribute to defining the culture of an individual. However, where someone works or goes to school, can also have a material impact on both their identity and their understanding of situationally acceptable behavior norms. Family, peer groups, sport

teams, and other voluntarily adopted social environments can all have their own specific culture, which can potentially be significantly different from other situations in the same individual's life. While it is possible to conceive of culture in a specific situation at a specific moment, for clarity this study used context as a more specific term representing the various influences of culture and environment on a specific moment in an individual's life. Thus, context is used to help establish that the collection of influences on an individual are situationally and temporally specific, where culture is a broader social environment that loosely bounds an individual.

Dependent variable is the calculated conflict style designation identified by the TKI assessment for a participant; or alternatively, for the purpose of statistical calculation, a dichotomous, (binary 1 or 0) state/dummy variable indicating that first assessment conflict style is different than second assessment conflict style.

Independent variables are options selected by participants when completing the TKI pre-survey assessment. The independent variables utilized in this study include: age, work level, education level, and reason for assessment.

Personality type is a, consistent across time, collection of traits exhibited by individuals that is derived from biologically determined makeup characterized by temperament and patterns of cognition (Ardelt, 2000; Costa & McCrae, 1994; John, Robins, & Pervin, 2008; Wilks, 2009, Myers, 1987, Graziano, 2003). For the purpose of this study, personality type is an immutable collection of characteristics of an individual that does not materially change by circumstance or over time.

Appendix H: Literature Search Strategy

The following terms were used individually and in combination for searches across Journals in the areas of Conflict, Conflict Resolution, Conflict Management, Psychology, Organizational Training, Teambuilding, Management Training, Education, Relationships, Learning Theory, and Statistical Analysis. The Alvin Sherman Library collection at Nova Southeastern University, including Journal Finder tools, Wiley Online, ProQuest, Emerald Insight, McGraw-Hill, Ovid, Oxford University Press, JSTORE, as well as public sources of information available via internet search were used.

Search terms, used individually and in combination:

accommodate
accommodated
accommodating
adaptive
adult behavior
adult learning
age conflict
age conflict handling
age conflict style
age related conflict
assessment
avoiding
awareness
before after analysis
behavior
behavior characteristics
behavior management
behaviorism
behaviorist
cognition
cognitive learning
cognitivism
collaborating
common language
competence
competing
compromising
conditioned
conditioned behavior
conflict
conflict assessment
conflict circumstance
conflict competence
conflict competency
conflict culture
conflict intelligence
conflict education
conflict environment
conflict handling behavior
conflict handling style
conflict intelligence
conflict management
conflict parties
conflict patterns
conflict situation
conflict style
conflict style
conflict style assessment
conflict style behavior
conflict tactics
constructivism
constructivist
context
contextual
correlate
correlated
correlation
correlational
correlational paradigm
cultural intelligence
culture
curriculum
default conflict style
demonstrated conflict style
dependent
dependent t-test
differential
dual concerns model theory
education
effective conflict handling
effective conflict skills
effective conflict tools
emotion management
emotional conflict
emotional intelligence
epistemological
epistemology
expectation of behavior
falsifiable
feedback
feedback loop
foundational beliefs
foundational traits
hypotheses

hypothesis
immutable
interpretivist
knowledge
learned behavior
learning context
learning framework
learning theories
learning theory
level of concern other
level of concern self
management of differences exercise
mode
methodologies
methodology
normative
obliging
observed conflict handling
observed conflict style
ontological
organizational bullying
organizational conflict
organizational conflict expectations
organizational conflict handling expectations
organizational conflict style expectations
organizational training framework
organizational training objectives
paired sample statistical testing
paired sample t-test
paradigm
participant
perception
personal characteristics
personal label
personality
personality trait
personality type
positive conflict
positivist
postpositive
postpositivism
postpositivist
pre post analysis
predictable
predictive
preference
problem solving
problem solving training
quantifiable
quantitative paradigm
quantitatively
reflexivity
regression analysis
self-awareness
self-perception
self-understanding
significance
socialization
standardized testing
state
state versus trait
statistical relationship
systems
teaching framework
team conflict
team training
temporal
temporal
temporal state
theoretical
thomas-kilmann assessment
thomas-kilmann instrument
thomas-kilmann mode
tki
tki assessment
tki instrument
tki measurement
training expectations
training framework
trait
variance
worldview
measuring conflict skills
measuring conflict competency
positive conflict organizational conflict training
organizational conflict measurement