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Composition, Conflict Expression, and Psychological Safety in Teams: A Longitudinal Investigation

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Composition, Conflict Expression, and Psychological Safety in Teams: A Longitudinal Investigation

by

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Abstract

Title: Composition, Conflict Expression, and Psychological Safety in Teams: A Longitudinal Investigation

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Research on conflict in organizations has previously been investigated as conflict management style, conflict content, and conflict culture. Weingart and colleagues (2015) proposed a new framework of examining conflict as conflict expression, which can be defined as an individual's particular verbal or non-verbal behaviors in expressing disagreement. The current study aimed to expand the nomological network surrounding conflict expression in teams. First, the study examined the effect of each conflict expression on team performance. Second, the study examined team composition in terms of personality and political skill as antecedents of conflict expression. Third, the study examined the effect of political skill on escalatory conflict spiral. Finally, the study examined the bidirectional relationship between conflict expression and psychological safety emergence over time. To investigate these relationships, the current study used archival data collected over six-time points within 24 student project teams. To test for these hypothesized relationships, regression, moderated regression, latent growth curve modeling, and cross-lagged panel analysis were conducted.

The results of the current study suggested that arguing, undermining, and disguising negatively predicted subjective team performance. Political skill was found to negatively predict arguing, undermining, and disguising. No support was found with regards to personality, escalatory conflict spirals, and the bidirectional relationship between conflict expression and psychological safety. Based on the current study's results, organizations can use a political skill measure as part of their selection and team composition procedures. In addition, organizations should also implement interventions that aims to enhances a team's psychological safety near the end of the team's lifecycle to prevent the team from engaging in conflict expressions that are harmful to the team. Future research should continue examining the conflict expression framework. The current study's limitations were also discussed.

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List of Keywords

Conflict expression

Intragroup conflict

Psychological safety

Team composition

Personality

Political skill

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Introduction

Organizations recognize the importance of using teams because teams can accomplish tasks and work more effectively and efficiently (Kozlowski & Ilgen, 2006). However, it is not always the case that teamwork will proceed effectively as wanted. One explanation for this is that in a team, there are people with different views and personalities. Given this difference across individuals within a team, conflict is often inevitable (Pondy, 1967; Greer & Dannals, 2017). Therefore, it is essential that both researchers, as well as practitioners, understand the nature of intragroup conflict, its implications, and how to manage conflict effectively to ensure the continued success and health of a team.

Previously, research examining conflict in organizations have extensively looked at conflict type (Greer & Dannals, 2017) and conflict management (Holt & DeVore, 2005). However, the literature on conflict content was criticized for not addressing the role that individual behavior has on conflict (Bendersky, Bear, Behfar, Weingart, Todorova, & Jehn, 2014). Meanwhile, the literature on conflict management style was criticized for not being able to explain conflict outside of individual competitive and accommodating behavior for one another (Speakman & Ryals, 2010). Given such criticism, there is a need to understand the complex nature of conflict in organizations better.

A recent framework proposed by Weingart and colleagues (2015) suggested intragroup conflict can also be examined through conflict expression, which can be defined as an individual's pattern of verbal or non-verbal behavior when they are expressing oppositions or different views to other people. This new approach in examining conflict can help both researchers and practitioners alike better understand how conflict can affect various team affective states and processes. By doing so, researchers, as well as practitioners, can further develop an effective conflict management strategy that can help minimize the harmful effect that conflict has on a team. Therefore, the current study examined how individuals express conflict in teams through the framework proposed by Weingart et al. (2015). To be specific, this research examined how particular forms of conflict expression can unfold through the influence of a team's composition in terms of personality and political skill, and how the emergence of particular forms of conflict expression relates to the simultaneous emergence of psychological safety.

Researchers have acknowledged that the nature of teamwork is dynamic, yet, most of the research on teams has investigated teamwork through a snapshot of a team's episode of performance instead of a longitudinal investigation of teamwork (Mathieu, Hollenbeck, Knippenberg, & Ilgen, 2017). Because of that, several researchers have made calls for more longitudinal research on teams (e.g., Cronin, Weingart, & Todorova, 2011). Therefore, the current study also answered the call for more longitudinal research on teamwork by examining the relationship between the

emergence of conflict expression and psychological safety over time and how these relationships will affect team performance.

Literature Review

Definition of Team

As organizations are moving toward reorienting themselves to become team-based organizations (DeChurch, Mesmer-Magnus, & Doty, 2013), research needs to continue to better understand the nature of teamwork. However, to do so, a working definition of teams must be established.

Historically, research on groups and teams have used the two terms interchangeably despite theoretical differences (Kozlowski & Bell, 2003). While groups and teams are similar in the fact that they consist of two or more persons working together, the distinction here is that in order for a group to be considered as a team, this group of people must be working with one another to achieve a shared goal. For example, in a law firm where there are a group of people, they are working in the same company and handling different legal cases. However, this does not mean that they work with one another. In this scenario, the people working together here are considered to be a group. In another example, in an annual video game event called The Dota 2 International, hosted by Valve, where several groups consist of five individuals competing with one another in a tournament to win a prize pool of over 13 million dollars. In order to win this prize, these five individuals must work with one

another by communicating and coordinating with each other and bringing in their specialties and capabilities to accomplish certain tasks and objectives to win games against other teams. In this scenario, this group of people has a clear shared objective that requires them to work with one another to complete and therefore, would be considered as a team. This scenario of a team is consistent with the definition of team as suggested by Kozlowski and Ilgen (2006) that "a team is defined as (a) two or more individuals who (b) socially interact (face-to-face or, increasingly, virtually); (c) possess one or more common goals; (d) are brought together to perform organizationally relevant tasks; (e) exhibit interdependencies with respect to workflow, goals, and outcomes; (f) have different roles and responsibilities; and (g) are together embedded in an encompassing organizational system, with boundaries and linkages to the broader system context and task environment" (p. 79). Therefore, the current research operationalized "team" with the definition by Kozlowski and Ilgen (2006) as outlined above.

Traditionally, team research has often been conducted through the guidance of the input-process-output (IPO) model by McGrath (1964). Input includes the antecedents that allow the team processes to function. Examples of input include team characteristics and team composition. Process includes behaviors and actions that the team undertake to keep the work of a team going. Examples of process include team coordination and communication. Output is the outcomes associated with the teamwork processes (i.e., team performance). However, the IPO model was criticized

to lack the inclusion of various team emergent states, that is cognitive, affective, and motivational states of a team (Marks, Matthieu, & Zaccaro, 2001), and the temporal dynamics of teamwork (Mathieu, Maynard, Rapp, & Gilson, 2008). These criticisms were later resolved by Ilgen (2005). He suggested to change "P" to "M" which means mediators to include various team emergent states and add in "I" at the end of O to signify the ongoing dynamic nature of teams which then becomes the IMOI model. Since then, the IMOI model has continued to guide the research questions of teamwork in the field (Mathieu et al., 2008).

Team Performance

Perhaps the most important criterion in team research would be team performance. Mathieu and colleagues (2008) conducted an extensive literature review of team effectiveness and have suggested that there are three major ways one can examine team performance. First is the organizational-level performance, which focuses on outcomes such as the financial well-being of an organization. Second is team performance behaviors and outcomes, which suggest that team performance can be viewed as either behavior or as outcomes (Beal, Cohen, Burke, & McLendon, 2003). Performance as behavior focuses on the actions and processes that allowed a team to achieve a certain outcome while performance as outcome focuses on the result of these behaviors and actions. And finally, role-based performance, which focuses on the competencies that team members must have to perform their jobs (Welbourne, Johnson, & Erez, 1998). In addition to these performance outcomes, Mathieu and

colleagues (2008) have also suggested that team members' affective reaction and viability are also important criterions to examine in relation to team outcomes. Examples of these types of outcome include team satisfaction, team commitment, and team viability.

While there are several different team outcomes as outlined above, the current study examined team performance as performance outcomes. Specifically, this study examined the team members' subjective perception of team performance.

Personality in Teams

Organizations have long been interested in understanding the role of individual personality has on organizational well-being (Oswald & Hughes, 2011). Personality can be understood as a combination of relatively permanent traits that make up a person (McCreary, 1960). What this means is that the reason why people behave and communicate in a certain way is because of their personality. Given the conceptualization of personality, researchers have attempted to explain the constructs that can explain personality and how it works. This has resulted in several competing models of personality models. Among these models, the most well-known model is perhaps the Five Factor Model (FFM) or the Big Five Model of personality (Digman, 1990).

The FFM posits that personality can be explained through five factors: extraversion, conscientiousness, agreeableness, openness to experience, and

neuroticism (Digman, 1990). Extraversion refers to the degree to which a person is social and outgoing. Conscientiousness refers to how an individual's trait of being careful and hardworking. Agreeableness refers to an individual's tendency to agree or disagree with others. Openness to experience refers to an individual's trait of being curious and intellectual and experience seeking. Finally, neuroticism refers to an individual's propensity to experience negative feelings, such as anxiety and depression.

Research on personality at the team level of analysis is often referred to as deep-level team composition. That is, personality examined as compositional variables that explain various team emergent states and processes (Bell, Brown, Colaneri, & Outland, 2018). Research on team composition has adopted three methods for operationalizing team composition. The first and most common method is to calculate the mean score of a measure across all individuals in the team (Barrick, Stewart, Neubert, & Mount, 1998). This method assumes that "the amount of characteristic possessed by each member increases the collective pool of that characteristic" (Barrick et al., 1998, p. 378). The second method is focusing on the variability of the measure (Barrick et al., 1998). This method is used to examine the varying levels of traits and characteristics of the members within a team on team processes. For example, one can use this method to examine how diversity in extraversion in a team affects team cohesion. And the third method is to focus on the highest or lowest score of an

individual in the team (Barrick et al., 1998). This method is used to examine whether a single individual score on a certain trait could affect a team process or emergent state.

Barrick and colleagues (1998) stated that the decision to use the method for operationalizing team composition depends on the task of the team, the research question that is being asked, and the trait that is being examined. A taxonomy on task type developed by Steiner (1972) has helped in determining the appropriate operationalization based on the task of the team. Specifically, under the interdependence category, there are five types of task, (1) additive task, requires the sum of the work done by each team members, (2) compensatory, requires the average of the work done by each team members, (3) disjunctive, requires an individual work for the whole team, (4) conjunctive, requires all team members to work at a minimally acceptable level, and (5) discretionary, requires team members to determine the way that they contribute or combine each individual contribution. According to Barrick and colleagues (1998), the additive task is best operationalized through calculating the mean score, the compensatory task is best operationalized through calculating the variance, the disjunctive task is best operationalized through using the maximum method, and the conjunctive task is best operationalized through using the minimum method.

A recent review of team composition by Bell and colleagues (2018) have highlighted the research findings on how a team's personality influences various team's emergent states and processes. Specifically, the research on team personality

composition has a general agreement that a team with more conscientious members is more beneficial to team performance because conscientiousness team members are more likely to help their team members (Porter, Hollenbeck, Ilgen, Ellis, West, & Moon, 2003) and problem-solve in teams (Courtright, McCormick, Mistry, & Wang, 2017). Additionally, Bell and colleagues (2018) pointed out that teams with more sociable members are more likely to develop better team emergent states and processes. That is the teams with more agreeable members are more likely to develop better team cohesion (i.e., Barrick et al., 1998), and extraverted teams can are more likely to engage in information sharing (Hsu, Wu, & Yeh, 2011) which can better develop team shared mental model (Fisher, Bell, Dierdorff, & Belohlav, 2012).

To date, there has been two meta-analyses that examined team composition of personality and team performance. The first study was conducted by Peeters, van Tuijl, Rutte, and Reymen (2006). In their study, they examined two methods of operationalization of personality composition -- composite score and standard deviation score. They found that the mean level of agreeableness and conscientiousness positively predict professional team performance while diversity in agreeableness, conscientiousness, and openness negatively related to professional team performance. For student teams, they found that the mean level of neuroticism is negatively related to team performance. Moreover, diversity in agreeableness, conscientiousness, and emotional stability are negatively related to team performance.

However, due to the small sample of the study, the results of their study should be interpreted with caution.

A second study by Bell (2007) consists of a larger sample of studies included in the meta-analysis. In addition to examining composite score and standard deviation score of team composition, the study also included other methods of operationalization for team composition, which are maximum, minimum, and others. Overall, the study found that the relationship between personality factor and team performance were higher in field studies in comparison to lab studies. Overall, conscientiousness (ρ = .11), agreeableness (ρ = .12), extraversion (ρ = .09) all yielded a small effect size. However, the effect sizes of conscientiousness (ρ = .30) and agreeableness (ρ = .31) were of medium effect size in the field sample, while the effect size of extraversion (ρ = .15) in the field sample remained small. Emotional stability, or neuroticism, and openness did not have significant results. However, for emotional stability, the effect size of the field sample was significant and relatively medium effect size (ρ = .20). Additionally, the results of the meta-analysis by Bell (2007) suggested that there is no best operationalization for team composition. She also provided a recommendation consistent with the point suggested by Barrick and colleagues (1998) that the operationalization for team composition should be dependent upon the variable of interest.

In summary, research on personality at the team level of analysis has suggested that teams with a higher level of extraversion, conscientiousness, agreeableness, and

openness tend to have a higher level of functioning while teams with a lower level of neuroticism tend to yield a lower level of functioning (Bell et al., 2018). However, there are still many research questions on personality in teams that have yet to be answered. For example, it is often not the case that only one personality trait would dominate the way that team function; rather, these personality traits interact with one another to determine how the team function. Furthermore, with a more holistic approach on personality, that is using latent profile analysis to determine a typical combination of personality traits for the team (Ferguson & Hull, 2018), can provide additional insights on how teams function. Therefore, examining personality at the team level of analysis on team emergent states and processes through these approaches can contribute to a better understanding of personality in teams. The current study contributes to this gap in knowledge by examining the interaction between two personality traits – extraversion and neuroticism – in explaining how teams engage in conflict expression behavior.

Political Skill in Teams

Organizations are inherently political (Longnecker, Sims, Gioia, 1987). Therefore, individuals within the organization engage in political behaviors, which are behaviors that aim to help them navigate through different situations and achieve the desired outcome that they wished to achieve (Ferris, Treadway, Kolodinsky, Hochwarter, Kacmar, Douglas, & Frink, 2005). Pfeffer (1981) first coined the term *political skill* in discussing the role that politics play in organizations. Specifically, he

argued that in order for an individual to be successful, they must have political skill. Mintzberg (1983) later suggested that political skill refers to the use of persuasion, manipulation, and negotiation with others. Based on this understanding, political skill can be defined as one's ability to understand others effectively at work and influence others to help them meet their own personal or organizational objectives (Ferris et al., 2005).

In their seminal paper discussing the theoretical framework of political skill in organization, Ferris and colleagues (2007) stated that the political skill construct consists of four dimensions, social astuteness, interpersonal influence, networking ability, and apparent sincerity. Social astuteness refers to one's ability to be sensitive and aware of the social situation that he or she is in. Interpersonal influence refers to one's ability to effectively influence other people to engage in certain behaviors to meet their goals. Networking ability refers to one's ability to connect and develop interpersonal relationships with various people. Apparent sincerity refers to the degree to which an individual is or is perceived to be sincere and authentic. Taken together, an individual that has a high level of politic skill is considered to be an individual who knows how to connect and network with other people and influence them to help that individual achieve their goals, and these actions by that individual are viewed by others to be sincere and genuine.

Research on political skill was able to link the positive effect of an individual's political skill on an individual's career-related outcome in an organization (Kimura,

2015). A meta-analysis by Munyon, Summers, Thompson, and Ferris (2014) examined the relationship between the individual level of political skill on various organizational related outcomes. Overall, they found that political skill has a positive relationship with many variables, including self-efficacy (ρ = .45), job satisfaction (ρ = .29), organizational commitment (ρ = .28), work productivity (ρ = .14), organizational citizenship behavior (ρ = .38), career success (ρ = .27), and personal reputation (ρ = .46). Also, they found that political skill was negatively related to physiological strain (ρ = -.10).

While research on political skill at the individual level of analysis was able to establish its positive effect on various organizational outcomes, at the team level of analysis, there are still many unanswered questions. Ahearn, Ferris, Hochwarter, Douglas, and Ammeter (2004) investigated the effect of the political skill of leaders on team performance and found that leader political skill significantly positively predicts team performance. The results of this study suggest that a leader having a high level of political skill will be beneficial to team performance. Lvinia, Maher, and Harris (2017) found that team political skill can lead to a higher level of team trust and team efficacy. Additionally, a recent study by Semrau, Steigenberger, & Wilhelm (2017) investigated the effect of political skill on team performance and found that teams with a common professional background, having a high level of political skill will positively predict team performance. However, when these teams have low levels of collective team commitment, the team performance will be lower. The result of this

study found support for the idea that political skill can influence team level outcomes depending on people's background and collective team commitment. In addition to these studies, Lvinia, Johns, and Vandenberghe (2015) found that team task and social cohesion mediates the relationship between team political skill and team performance.

In summary, political skill was found to be useful to have at both the individual and team level. However, there are still many research questions on political skill at the team level of analysis that are unanswered. Currently, political skill was found to be positively related to team trust, team efficacy (Lvinia et al., 2017), and team performance (Semrau et al., 2017). Also, both task and social cohesion mediate the relationship between political skill and team performance (Lvinia et al., 2015). However, the literature on political skill has yet to establish how the team political skill influences various team behaviors and processes. Therefore, the current study fills this gap of knowledge by investigating the relationship between team political skill and team conflict expression.

Psychological Safety in Teams

Psychological safety is defined as a shared belief among members of a team or an organization that they are safe to engage in or provide opinions that are considered to be risk-taking (Edmonson, 1999). Previous research on psychological safety has examined this construct at different levels of analysis (Newman, Donohue, & Eva, 2017). At the individual level, psychological safety is operationalized as an individual's perception of feeling safe, secure, and confident in being able to be who

they are and express their opinions (Kahn, 1990). At the team and organizational level of analysis, psychological safety is operationalized in a similar fashion as the definition of the construct as described above. The current study will operationalize psychological safety in the same manner.

In a study by Google's People Analytics Unit, psychological safety was found to be the number one characteristic of high performing teams (Bergman & Schaeppi, 2016). A recent review of the literature on psychological safety by Newman, Donohue, and Eva (2017) have found consistent results supporting such positive effect of psychological safety in organizations. Generally, research has found that psychological safety is positively associated with outcomes such as enhanced interpersonal communication (Leroy, Dierynck, Anseel, Simons, Halbesleben, & McCaughey, 2012), improvement in learning behavior in teams (Ortega, Sanchez-Manzanares, Gil, & Rico, 2010), work engagement (Nembhard & Edmonson, 2011), and team creativity and performance (Sanners & Bunderson, 2013).

A meta-analysis study by Frazier, Fainschmidt, Klinger, and Vracheva (2017) examined the relationship between psychological safety with various antecedents and outcomes at both the individual- and the group-level of analysis. At the individual level of analysis, psychological safety is positively related to all variables, except openness to experience being the only variable that did not have a significant relationship with psychological safety. The effect size of these antecedents and

outcomes ranges from ρ = .13 to ρ = .86, with creativity having the lowest effect size and work design characteristic of interdependence having the highest effect size.

For the group-level results, the relationship between psychological safety and antecedents and outcomes variables are all significant with an effect size of medium to large. From the antecedent side, the general factor with the highest effect size is supportive work context at ρ = .51. Under this, peer support yields a higher effect size, ρ = .57, suggesting that having coworker being supportive of one another being the biggest contributing factor to developing a psychologically safe workplace environment. From the outcomes side, satisfaction had the highest effect size ρ = .69, suggesting that psychological safety explain a large portion of group-level work satisfaction.

With such overwhelmingly positive results of psychological safety in organizations, psychological safety will continue to be an important climate variable in providing effective teamwork. A study by Bradley and colleagues (2011) has established such a beneficial role that psychological safety has on team performance when there is conflict. Given such finding, it would then also be important to examine the role that psychological safety has on team conflict expression.

Conflict Theories

In his seminal paper on organizational conflict, Pondy (1967) have listed out different definitions and conceptualizations of conflict. Specifically, he suggested that

conflict can be used to describe an antecedent condition to conflict behavior, conflict affective states, and cognitive state of an individual, and conflict behavior. Because of these different definitions and operationalization of conflict, there have been several different frameworks that aim to examine conflict in organizations. This section will outline those frameworks and the general research overview of these frameworks thus far.

Conflict Management Style

Conflict management style or conflict resolution style can be defined as an individual orientation toward how they handle and manage conflict (Rahim and Bonoma, 1979). Initially developed by Blake and Mouton (1964), conflict management style was thought of to have five different types: *forcing*, *withdrawing*, *smoothing*, *compromising*, and *problem-solving*. These types were reinterpreted by Thomas (1976). Rahim and Bonoma (1979) further synthesized the two approaches by Blake and Mouton (1964) and Thomas (1976) and proposed that conflict management style can be explained through two dimensions: *concern for self* and *concern for others*. The first dimension, concern for self, can be understood as to how an individual primary interest in resolving the conflict is for themselves. While, the second dimension, concern for others, can be understood as an individual primary interest in resolving the conflict for other individuals or party that is involved in the conflict.

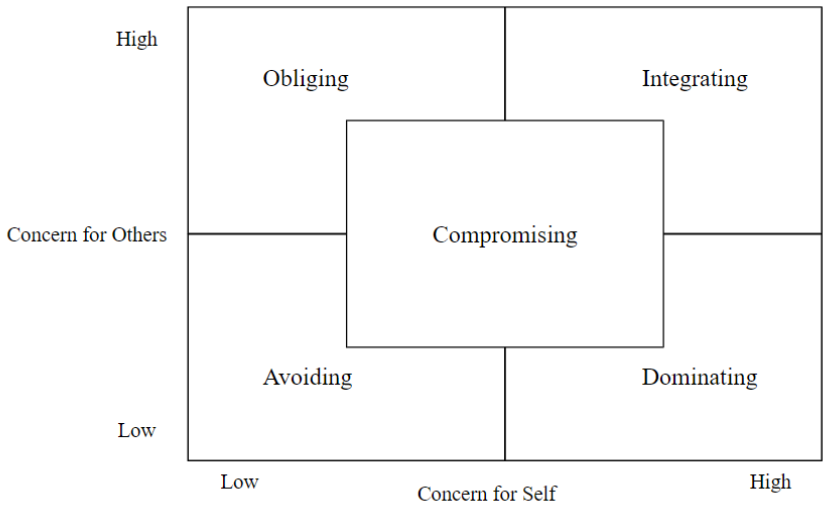

Figure 1. Dual Concern Theory of Conflict Management Style (Adapted from Rahim & Bonoma, 1979)

From these two dimensions, Rahim and Bonoma (1979) had proposed five styles of handling conflict (Figure 1). *Integrating* style can be understood as an individual having high for both concerns for self and others. An individual who has this style of managing conflict tends to actively engage in exchanging information with others to achieve a solution that is beneficial for both self and others. *Dominating* style can be understood as an individual having a high concern for self and low concern for others. An individual who has this style of managing conflict tends to ignore the information that others have to say and focus more on the information that they have to make sure that the conflict is resolved in a way that is most beneficial for them. *Obliging* style can be understood as an individual having low concern for self and high concern for others. An individual who has this style of managing conflict

tends to downplay their view and put others views as more important than theirs to achieve a solution that is more beneficial for the other party. *Avoiding* style can be understood as an individual having low concern for both self and others. An individual who has this style of managing conflict tends to be avoidant of others and not having any exchange of information with the other party, which may result in no solutions being achieved for the conflict. Finally, *compromising* style can be understood as an individual having a moderate concern for both self and others. An individual who has this style of managing conflict tends to exchange information with others to reach an acceptable solution that requires both parties to have to give up something. According to Rahim and Bonoma (1979), there is no best conflict management style; instead, each style can be most beneficial to an organization or a team depending on the situation.

Most research looking at this framework of conflict has predominantly examined individual characteristics, such as age, gender, and cultures, in relation to what type conflict management style would people engage in (i.e. Gbadamosi, Abbas, & Al-Mabrouk, 2014; Kim, Wang, Kondo, & Kim, 2007; Morris, Williams, Leung, Larrick, Mendoza, Bhatnagar, Li, Kondo, Luo, & Hu, 1998; Postuma, White III, Dworkin, Yanez, & Swift, 2006). However, there have been a small number of studies examining these conflict management styles in a team context. The research examining these conflict management styles have mostly looked at integrating conflict management styles and that this style of conflict management is positively related to

team performance (Paul, Samarah, Seetharaman, & Mykytyn, 2004; Paul, Seetharaman, Samarah, & Mykytyn, 2004; Somech, Desivilya, & Lidogoster, 2009). One study by Somech and colleagues (2009) also looked at dominating conflict expression style and found that this type of conflict expression style is negatively related to team performance.

Conflict Cultures

The conflict management literature examines how conflict can be handled at the team or dyad level of analysis; however, it does not look at conflict management at a higher level (Gelfand, Leslie, & Keller, 2008). Given such limitation of conflict management style, Gelfand and colleagues (2008) took a macro-level approach to the previous conflict management theory and developed a theory of organizational conflict culture. The conflict culture theory (Gelfand et al., 2008) argued that organizations provide contexts that serve as the standard procedures or norms that force the individuals within the organization to comply and handle conflict in a certain way, and by doing so, the variation in individual conflict management strategies will be reduced.

Initially, conflict culture was first discussed by de Dreu and colleagues (2004), where they proposed a model of conflict on individual well-being. Gelfand and colleagues (2008) then further expanded this notion of conflict culture and defined it as "a socially shared and normative way to manage conflict" and that it "minimizes the individual variation in conflict management strategies" (p. 139).

In their paper, Gelfand and colleagues (2008) proposed that conflict cultures can be categorized into four types of cultures: *collaborative*, *dominating*, *avoidant*, and *passive-aggressive* conflict culture. These different types of conflict cultures can be understood similar to the conflict management/resolution styles, but with the difference being that the conflict culture operates at the organizational level. In a follow-up study, Gelfand, Leslie, Keller, and de Dreu (2012) found that, instead of four conflict culture as originally proposed, there are three types of conflict cultures: *collaborative*, *dominating*, and *avoidant* conflict culture. Collaborative conflict culture is characterized by conflict management norms that foster cooperation and open dialogues. This conflict culture is similar to integrating conflict management style. Dominating conflict culture is characterized by conflict management norms that encourage individuals within the organizations to actively engage in confrontations to handle conflict. This conflict culture is similar to dominating conflict management style. Finally, avoidant conflict culture is characterized by conflict management norms that promote individuals to suppress their conflict and maintain harmony with others. This conflict culture is similar to avoiding conflict management style. In addition to results confirming these three types of conflict culture, Gelfand and colleagues (2012) are predictive of various climate variables, such as psychological safety and learning climate.

Since the development of conflict cultures, the research on this framework has been scant. Choi (2013) examined the effect of each conflict cultures on job

satisfaction and found that collaborative culture has a positive effect on job satisfaction. On the other hand, dominating culture hurts job satisfaction, and no significant relationship was found with regards to avoidant conflict culture. Similar results were found by Choi and Ha (2018). However, they examined the effect of conflict culture on job satisfaction and productivity in the U.S. and Korea. Specifically, they found that collaborative conflict culture was positively related to both job satisfaction and work productivity in both countries. In the U.S., dominant culture was negatively related to only job satisfaction, and no relationship was found for avoidant culture. In Korea, dominant culture was negatively related to job satisfaction and positively related to work productivity, and avoidant culture was positively related to job satisfaction. Taken together the results of these studies suggest that similar to conflict management/resolution style, conflict culture can be important to individual work outcomes and that cultural differences should be considered in researching the effect of conflict cultures in an organization.

Conflict Type

Conflict type has been extensively researched in the conflict literature (Greer & Dannals, 2017). Proposed by Jehn (1994, 1995), conflict type refers to the underlying nature and source of the conflict. Initially, the conflict type framework suggested that conflict in teams can be understood as two different types: *relationship conflict* and *task conflict* (Jehn, 1994). Relationship conflict can be defined as tension and incompatibilities among people in group work or team, while task conflict can be

defined as disagreements about the task content itself. In a later study, Jehn (1997) introduced a third type of conflict, *process conflict*, which can be defined as team members having disagreements about the process and how things are being done in a team. More recently, Bendersky and Hays (2012) suggested that there is a fourth type of conflict, *status conflict*, which can be defined as disputes over people's relative status positions in their group's social hierarchy. Research on this framework has consisted of studies examining the effect of each type of conflict on team processes and outcomes, with some recent studies examining the profile of these conflict types and how they relate to team performance (O'Neill, McLarnon, Hoffart, Woodley, & Allen, 2018).

Task conflict. In the conflict type framework, task conflict has been researched the most (de Wit, Greer, & Jehn, 2012). Two meta-analyses have found contradictory evidence regarding the effect of task conflict on team performance. De Dreu and Weingart (2003) meta-analysis found that all three types of conflict -- task, relationship, and process -- are negatively related to team performance. In a later meta-analysis study by De Wit and colleagues (2012), it was found that task conflict did not have any positive or negative effect on team performance. They suggested that the relationship between task conflict on team performance would rely on potential moderators. In their study, de Wit and colleagues (2012) suggested that when task conflict co-occur with relationship conflict, then task conflict would harm team performance. Another study by Shaw and colleagues (2011) have also found similar

results suggesting the moderating role of relationship conflict on the relationship between task conflict and team performance.

In addition to relationship conflict, other moderators have also been found in explaining the relationship between task conflict and team performance. Bradley and colleagues (2012) found that psychological safety moderates the relationship between task conflict and team performance, such that when a team psychological safety is high, task conflict would have a positive effect on team performance. Not long after, Bradley and colleagues (2013) have also found that personality, specifically, openness to experience and emotional stability, moderate the relationship between task relationship and team performance, such that when a team is high on those personality traits, then task conflict would positively affect team performance. Other moderators have also been found, including task type (Jehn, 1995; Puck & Pregernig, 2014) and intrateam trust (Choi & Cho, 2011).

Relationship conflict. Relationship conflict has generally been found to be harmful to the team (de Dreu & Weingart, 2003; Greer, 2012). The reason why such negative effect of relationship conflict on the team has been found is that relationship conflict is associated with intense emotion (Chen & Ayoko, 2012; Jehn, Greer, Levine, & Szulanski, 2008). Given the consistent negative effect of relationship conflict on a team, most research on this type of conflict has focused on how to prevent or manage it.

Research has found that avoidant conflict management, that is team avoiding or work around the conflict, is the most effective conflict management strategy for relationship conflict (de Dreu & Van Vianen, 2001; Jehn, 1995). However, other conflict management approaches have also been found to be effective in managing relationship conflict. Auh, Spyropoulou, Menguc, and Uslu (2014) found results suggesting that when a team engages in collaborative conflict management, that is when team members must reach a conflict resolution that benefits all parties involved, the negative effect of relationship conflict on team performance was reduced. Additionally, implementing a positive and healthy socialization process have also been found to help manage relationship conflict (De Clerq, Thongpapani, & Dimov, 2009).

In terms of preventing relationship conflict, several studies have investigated factors that could lead to relationship conflict. Overall, this line of research has investigated many team composition variables in predicting relationship conflict. These team compositional variables include team personality; specifically neuroticism (Barsade, Ward, Turner, & Sonnenfeld, 2000), extraversion and conscientiousness (Bono, Boles, Judge, & Lauver, 2002), team size (Mooney, Holahan, & Amason, 2007); team type (Chen, 2006), and diversity in gender (Mohammed & Agnell, 2004), sex and age (Jehn, 1997), and nationality (Ayub & Jehn, 2010; Vodosek, 2007). Some research has also suggested that demographic faultlines (e.g., Polzer, Crisp, Jarvenpaa, & Kim, 2006) may also play a role creating relationship conflict while others suggest

otherwise (e.g., Choi & Sy, 2010). Therefore, the role that demographic faultlines play in relationship conflict remains inconclusive.

Aside from team compositional variables, team processes, emergent states, and other types of conflict have also been found to be predictive of relationship conflict. Jehn and Mannix (2001) found that having a high level of trust, respect, and cohesion is associated with a low level of relationship conflict. However, when there is competition in the team, relationship conflict could increase. Task conflict may also cause the team to start having relationship conflict when there is a low level of trust (e.g., Peterson & Behfar, 2003). Additionally, process conflict has also been found to be predictive of relationship conflict (van den Berg, Curseu, & Meeus, 2014).

Process conflict. Contrary to the previous two types of conflict, process conflict has not been researched as much as its predecessors. However, the effect of process conflict on team performance has been found. In the meta-analysis by De Wit and colleagues (2012), even though the number of studies on process conflict was not as high as the number of studies on the other types of conflict, they found that process conflict negatively affects team performance. Greer, Jehn, & Mannix (2008) have suggested that this type of conflict is the most detrimental and long lasting in comparison to the other types of conflict.

Greer and Dannals (2017) listed three reasons as to why process conflict has such a detrimental effect on team functioning. First, the process conflict is at the core

of teamwork; therefore, any conflict that is of that nature will often involve the feeling of justice and equity which will be related to negative emotions (Greer & Jehn, 2007). Second, the process conflict is about delegating resources and responsibilities to the team members (Greer, Caruso, & Jehn, 2011). Lastly, process conflict is not transparent; therefore, it is hard for team members to identify and resolve the conflict (Greer et al., 2011).

Despite the research evidence suggesting the negative effect that process conflict has on team performance, there have also been a small number of studies that found results suggesting that process conflict can be beneficial to the team (i.e., Goncalo, Polman, & Maslach, 2010; Jehn & Mannix, 2001; Martinez-Moreno, Gonazlez-Navarro, Zornoza, & Ripoll, 2009). However, these studies have one theme in common, which is that the process conflict of the teams in these studies happens early on during the team development lifespan. These studies' results suggested that process conflict can be beneficial to a team when it is effectively managed at the early phase of the team formation, hinting at team charter to be used as an effective tool to prevent process conflict (Wilkinson & Moran, 1998).

Status conflict. While status conflict has only been recently introduced into the conflict type framework (Bendersky & Hayes, 2012), there has been researching that found the effect that this type of conflict has on team performance. Similar to both relationship and process conflict, status conflict has also been found to be harmful to team performance (Bendersky & Hayes, 2012; Chun & Choi, 2014). Perhaps, the

apparent answer as to why status conflict has such a negative effect on team performance is because of the need and desire to be in a position of power from team members within the team (Chun & Choi, 2014). This tension forces the current leaders to be more defensive of their current position, which then creates a competitive work environment that is not conducive to a team setting.

Conflict Expression

A recently developed framework of examining conflict is conflict expression by Weingart and colleagues (2015; Figure 2). Their framework investigates conflict by examining the way that people communicate with one another either through verbal or nonverbal communication about disagreement/dissent. Specifically, in the framework, they proposed that conflict expression can be understood through two dimensions of *directness* and *oppositional intensity* and that these two dimensions can influence one's perception of the conflict and their decision to either escalate or de-escalate the conflict situation.

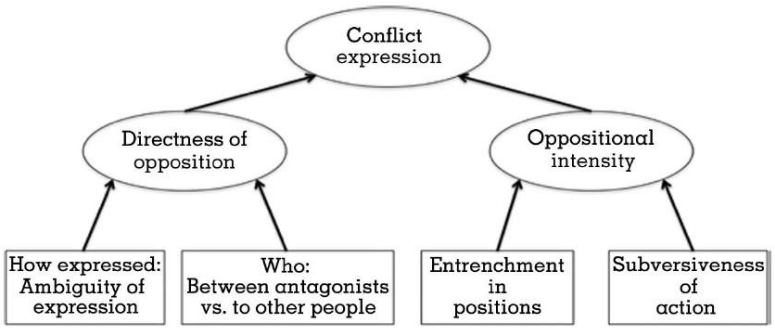

Figure 2. Model of Conflict Expression (Taken from Weingart et al., 2015)

The directness dimension of conflict expression focuses on two things, (1) the degree to which an individual explicitly or implicitly expresses their disagreement and (2) whether such communication happened with the parties that were involved in the conflict. That is, the directness dimension can be understood as whether an individual directly confronts with the people or person that they have a conflict with. Meanwhile, the oppositional intensity dimension of conflict expression focuses on the degree of force or strengths that an individual approach to expressing their conflict. Weingart et al. (2015) argued that this dimension is "characterized by entrenchment in a position and subversiveness of actions" (p. 240). Entrenchment can be understood as someone being strongly defensive, and subversiveness can be understood as someone engage in behaviors or actions that are designed to overthrow or to undermine others opinion. For example, a high level of opposition intensity can be that an individual chooses to raise their voice (i.e., yelling) to suppress others opinion.

Behfar and colleagues (2017) expand this framework by developing a measure of directness and intensity of conflict expression. In their measure, they further divide the construct into four ways one can express conflict: *argue*, *debate*, *undermine*, and *disguise*. Argue is characterized by a high level of directness and intensity. An example of the argue conflict expression behavior is when a person is directly confronting another person about the disagreement that they have with them, accompanied with yelling or refusing to hear what the other person has to say. Debate is characterized by a high level of directness with a low level of intensity. An example

of the debate conflict expression behavior is when a person is directly having a conversation with the person that they disagree with and is also trying to have a civil conversation where they both express their viewpoints and explain it thoroughly to the other person. Undermine is characterized by a low level of directness and high intensity. However, this type of conflict expression behavior, as suggested by Behfar and colleagues (2017), have three sub-categories of behavior, which are: dismiss, tease, and complain. An example of the undermine conflict expression is when a person is talking bad about the other person that they disagree with, or getting others to dislike them, or making mean jokes when they have a conversation with that person. Lastly, disguise is characterized by a low level of directness and a low level of intensity. An example of the disguise conflict expression behavior is using sarcasm when they are having a conversation with the person they disagree with or avoiding them.

Complementary to the measurement development, Behfar and colleagues (2017) found that conflict expression can predict additional variance in team process and affective outcomes (i.e., information sharing, psychological safety, trust, and subjective performance) on top of conflict content and conflict management at both individual and team level. Specifically, they found that debating was positively related to those team process and affective outcomes, while the other three types of conflict expression are negatively related to those process and outcomes. With these findings, the current study continues to build on the conflict expression framework by

hypothesizing the relationship between team composition of personality and political skill influences conflict expression and how that process of conflict expression relates to team psychological safety over time and team performance.

Summary of Conflict Theories

The process model of conflict proposed by Pondy (1967) provided us with a full picture of how we can view an episode of conflict, from the start to the end of that conflict episode. He suggested that a conflict episode would consist of (1) antecedent conditions, which are the cause of the conflict or the problem that is associated with it, (2) affective states, which are the feeling (e.g., stress, anxiety, anger) of the individuals that are involved in the conflict, (3) cognitive states, which are the perceptions and awarenesses of the individuals that are involved in the conflict, (4) conflict behavior, which are the verbal or nonverbal behaviors from the individuals that are involved in the conflict, and (5) conflict aftermath, which is the result of the conflict episode.

Piece by piece, these frameworks of conflict discussed above have contributed to the conflict literature in a way that is almost as if the puzzle pieces are coming together. That is, the conflict management style framework by Rahim and Bonoma (1979) have shed light on the possible ways that individual can navigate themselves through a situation when there is conflict. The conflict culture framework by Gelfand and colleagues (2008), while not far off from the conflict management style framework, provided us an understanding of conflict culture and climate factors that could play a role in how individuals within a team, or an organization, will behave and

react to the conflict. And the conflict type framework by Jehn (1994), allowed us to have a better understanding about the nature of the conflict, how and why conflict episodes happen, and what is the most appropriate way to prevent or manage that conflict. Now, the next framework for conflict, the conflict expression framework will continue to add to this puzzle to help us better understand this full dynamic picture of a conflict episode.

Hypothesis Development

Conflict Expression and Team Performance

The DICE measure of conflict expression expanded on the team conflict framework by suggesting that there are four ways that a team can express their conflict: argue, debate, undermine, and disguise (Behfar et al., 2017). Argue type of conflict expression is high on directness and high on oppositional intensity (Behfar et al., 2017). This means that when a team is engaged in arguing, the team members of that team will be confrontational with one another when there is a conflict, and those team members will be defensive about their opinion (Weingart et al., 2015). The combination of such confrontation and defensiveness is often viewed by others as negating their opinion (Gibbs, 1961; Stalpers, 1995), which can result in the conflict expression being perceived as a threat that will trigger the experience of strong and intense emotion by other team members (Ury, Brett, & Goldberg, 1993). This experience of negative and intense emotion will further reinforce the team members to engage in highly destructive verbal and non-verbal behaviors such as yelling or

fighting to force the other party to submit to their views (Brett, 2007; Weingart et al., 2015).

Imagine in a hypothetical medical team, there is one new team member, Cody, who is not aware of the role of other team members. Because of this lack of knowledge on other team members role, Cody was unable to communicate with the correct team members to have the necessary tasks done. This lack of communication with the team has been problematic in that Cody ended up doing most of the tasks that other team members were supposed to do. One member was agitated with the fact that Cody was not communicating with others and that he did all the work for other people, making them look bad. This angry member then confronted Cody, yelled and called him names, then told him to stop doing other people's work. Cody did not appreciate the way that this member communicated with him, and in response, Cody decided to also yell at that team member and told him to back off. At this point, both team members are arguing with one another to get their point across. No one was willing to listen to what the other person has to say. As a result, the medical team was not able to get the task needed to be done, causing the team to have poor performance.

Therefore, such a confronting approach along with the aggressive behaviors associated with this type of conflict expression will likely result in the conflict not being resolved (Weingart et al., 2015) and that the feud between these parties will continue to happen, causing a potential conflict spiral (Brett, Shapiro, & Lytle, 1998). Therefore, arguing is expected to negatively impact team performance.

Hypothesis 1a: Arguing is negatively related to team performance.

Conflict expression of debate is high on directness and low on oppositional intensity (Behfar et al., 2017). When a team is engaged in debating, the team members of that team will directly confront one another when conflict is happening in the team; however, the team members will also be willing to consider others' opinions (Behfar et al., 2017; Weingart et al., 2015). Here, team members have the opportunity to articulate their response back and forth with one another to further clarify the stance that they have on the conflict (Behfar et al., 2017). This approach is similar to constructive confrontation where individuals can openly express themselves and their disagreements while avoiding negative affect (Kellermanns, Floyd, Pearson, & Spencer, 2007). Constructive confrontation was previously found to be positively related to decision quality, which is a crucial aspect of team decision making (Kellermanns et al., 2007). Also, open communication, being honest, sincere, listening, and willingness to accept one's flaw are all characteristics of debate, and they were found to be effective conflict resolution strategies (Brown, Lewis, Ellis, Stewart, Freeman, & Kasperski, 2011). Together, these findings suggest that debating is positively related to team performance.

To illustrate, imagine in the hypothetical example of the medical team above, the team member did not yell or called Cody names. Instead, they approached the situation by talking calmly with Cody and asked him what happened and why was he not communicating with other team members on the task work. Because the team

member approached Cody calmly, he responded to that team member by stating that he did not know the role of each team members and he was not sure whom to talk to. With a better understanding of the situation, the team member then talked to Cody about the role of each team member so that in the future, he knows whom to talk to about certain tasks. This action of information exchange from Cody and the other team member was able to help Cody with understanding the role of other team members and prevented him from doing all the work tasks himself in the future. This result in the team performing better. Therefore, the current study hypothesizes that debating will positively impact team performance.

Hypothesis 1b: Debating is positively related to team performance.

The conflict expression type of undermine is low on directness and high on oppositional intensity (Behfar et al., 2017). This means that when a team is engaged in undermining, the team members will not be confrontational with one another when there is conflict, or they will not be able to provide a clear message of disagreement with others (Behfar et al., 2017; Weingart et al., 2015). Also, the team members of this team will be more reluctant to listen to the opinion of other team members (Behfar et al., 2017; Weingart et al., 2015). Together, this type of conflict expression consists of passive-aggressive behavior such as ostracizing, teasing, and gossiping as a mean to invalidate others' opinions (Behfar et al., 2017). These passive-aggressive behaviors are ambiguous in nature, meaning that the conflict is not acknowledged by other team members (Behfar et al., 2017). This creates a conflict asymmetry situation, where

team members have different perception and understanding of the conflict, which was found to have negative effect on team processes (Jehn, Rispens, & Thatcher, 2010). In addition, these behaviors were also found to have negative implications for teams and organizations. Specifically, workplace ostracism damages an individual's fundamental need to belong which then affects other psychological states such as self-esteem and self-control, which are crucial to one's effective functioning (Ferris, Brown, Berry, & Lian, 2008; Robinson, O'Reilly, & Wang, 2013). Relatedly, gossiping can also create a hostile work environment in a team or an organization (Grosser, Kidwell, Labianca, & Ellwardt, 2012). Altogether, this suggests that undermining can be harmful to the team through behaviors that negatively affect team members well-being; therefore, undermining will negatively impact team performance.

In the same medical team hypothetical example above, imagine Cody was not able to communicate the necessary task-relevant information to his coworkers because he did not know of the roles of his teammates. His teammates were frustrated with him for not communicating with him and doing all the task work, so they decided to isolate him and not involve him in various social functions at work. They also said a lot of mean things behind his back. When Cody overheard a conversation about him from his teammates, he learned about the gossiping about him that was happening at work, and it made him feel unwelcome and unappreciated at work. As a result, he was not able to motivate himself to get the necessary task work done, resulting in the team having a lower level of performance. These passive-aggressive types of behavior can

have a detrimental effect on team functioning, as illustrated above. Therefore, undermining is expected to negatively impact team performance.

Hypothesis 1c: Undermining is negatively related to team performance.

Finally, conflict expression of disguise is low on directness and low on oppositional intensity (Behfar et al., 2017). When a team is engaged in disguising, the team members will be less likely to be confrontational with one another (Weingart et al., 2015). They will also provide one another with ambiguous messages through sarcasm or jokes, making it difficult for others to understand their views (Behfar et al., 2017). Moreover, the team members do not have a strong attachment to their views which can also lead them to work around the issue instead (Behfar et al., 2017; Weingart et al., 2015). These types of behavior entail that the team members will be avoidant of one another when it comes to the conflict (Behfar et al., 2017). Because of this tendency to be avoidant, the team will be unable to successfully resolved the conflict that occurs, which can result in the team having a lower level of performance (Kuhn & Poole, 2000). However, because the team members are not entrenched in their opinions (Behfar et al., 2017), they will not attempt to force other team members to submit to their views (Weingart et al., 2015). In other words, the team members will not act and behave in an aggressive nor passive-aggressive manner toward one another. Therefore, this conflict expression may be negatively related to team performance due to its inability to resolve conflict (Behfar et al., 2017), however, the

impact that this conflict expression has will be less severe than arguing and undermining.

In the same hypothetical example as above, imagine other teammates did not communicate or say anything to Cody. They felt that because he was doing all the work, it made their jobs easier. Due to the lack of communication with the team, Cody continued to do the work that he was doing. This leads him to do more work than he was supposed to do on the team, causing him to feel burnout due to role overload and role conflict. It also caused him to be unable to do the work tasks that he needs to do, resulting in the team having a lower level of performance. Therefore, a team engaged in disguising may not be able to resolve the conflict and negatively affect team performance.

Hypothesis 1d: Disguising is negatively related to team performance.

Personality and Conflict Expression

Personality has been found to influence various team processes and emergent states (Bell et al., 2018). Given such a role of personality in a team, it would then be important to examine how team composition of personality influence conflict expression. The conflict framework (Weingart et al., 2015) suggested that conflict expression can be characterized by the directness of the expression (the clarity of the message and/or the expression of the conflict to the appropriate party) and the oppositional intensity (entrenchment in one's position and/or engaging in subversive

behaviors). Given such conceptualization of conflict expression, the current research argues that team composition in terms of extraversion and neuroticism can predict how team conflict expression unfolds.

The FFM of personality suggests that extraversion is made up of six subdimensions: friendliness, gregariousness, assertiveness, activity level, excitement-seeking, and cheerfulness (Wilt & Revelle, 2017). Of these dimensions, the assertiveness dimension suggests that when a team has a high level of extraversion, it is also likely that the team also possesses a high level of assertiveness, meaning that the team members of this team are readily able to communicate and provide information clearly and directly to other team members (Smith-Jentsch, Salas, & Baker, 1996). Because of this, a team with a high level of extraversion would also have a high level of directness and vice versa.

Additionally, drawing from affective events theory (Weiss & Cropanzano, 1996), the current research argues that when a team has a higher level of neuroticism, the team members of that team are more likely to experience negative emotions and affect (Bell et al., 2018; Martocchio & Jimeno, 2003). That feeling of negative emotion and affect then hinders the team members from being rational and understanding of others opinion (Weller, Ceschi, Hirsch, Sartori, & Costantini, 2018), and further reinforces them to be defensive with their opinion on the conflict (Ritz & Dahme, 1996). Therefore, teams with a higher level of neuroticism are more likely to engage in conflict expressions that are high on oppositional intensity.

With extraversion containing assertiveness as one of its subdimension (Wilt & Revelle, 2017) and neuroticism being responsible for the tendency to experience negative emotions (Martocchio & Jimeno, 2003), these two personality traits can interact with one another to predict how a team expresses conflict. For conflict expression of arguing, a team with a high level of extraversion and a high level of neuroticism will be more likely to engage in this type of conflict expression. This is because, for a team with a high level of extraversion and neuroticism, this team would consist of team members that are highly outgoing and assertive but also are not emotionally stable (Bell et al., 2018); meaning that these team members will interact and communicate with one another clearly because of their high level of extraversion (Bell et al., 2018). However, due to their lack of emotional stability because of a high level of neuroticism, they may not be able to understand the point that the other team members are saying clearly (Weller et al., 2018), resulting in the likelihood of team members being defensive and reacting more negatively to other views on the conflict (Donohue, 2012).

To illustrate, imagine a team with three people working on a writing group project and that this team has a high level of extraversion and neuroticism. One member was unable to write the section that they were supposed to in a specific way that the section was outlined. Because of the high level of extraversion leading the team to be more assertive, the other two team members confronted this individual and told them that their part was not written correctly. However, because of the high level

of neuroticism, the team member that wrote the part wrong took the message that the other two had said differently. Instead of taking it as feedback on their writing, this team member took it as a personal attack on their character. As a result, this individual being more defensive about the issue and immediately respond to the other team member by raising their voice, telling the other team members that they are wrong and that their part was perfect just the way it is. Therefore, a team with a high level of extraversion and neuroticism will be predictive of conflict expression of argue.

Hypothesis 2a: Teams with high levels of extraversion and high levels of neuroticism will engage in higher levels of arguing.

For conflict expression of debate, which is characterized by a high level of directness and low level of oppositional intensity (Behfar et al., 2017), a team with a high level of extraversion and a low level of neuroticism will be predictive of this conflict expression. This is because, with a high level of extraversion, the members of this team will be assertive with one another about the conflict that happens in the team (Wilt & Revelle, 2017). In addition to that, with the low level of neuroticism, suggesting that this team is more emotionally stable, the team members are less likely to experience negative emotion and they will be able to listen and hear what the other team members have to say (Weller et al., 2018). Because of their willingness to listen, this team will engage in a conversation in which they allow everyone to put forth their opinion and attempt to reach a solution that works with everybody on the team (Behfar et al., 2017; Weingart et al., 2015).

Imagine in the hypothetical sample of the team with a writing project as above, when the team member wrote their part wrong, the two team members look through the information that was written and develop detailed and specific feedback to the other team member so they can go back and adjust the part that was written. These two team members then provide that feedback to the person directly through the conversation because of their high level of extraversion. With the low level of neuroticism, the other team members understand that this information that was provided to them was for the overall performance of the team. They looked over the feedback that was given to them and continue to have a conversation with the other two team members, acknowledging the parts that they could have written differently and also suggesting that there are parts that could still be used for the paper. This conversation then allows the team members to exchange useful information with one another to reach a point where they now have a shared understanding of how the paper will turn out. Therefore, for a team with a team composition that is high on extraversion and low on neuroticism would be more likely to engage in conflict expression of debate.

Hypothesis 2b: Teams with high levels of extraversion and low levels of neuroticism will engage in higher levels of debate.

For a team with a composition that has a low level of extraversion and a high level of neuroticism, because of their low level of extraversion, the team members of this team will be less likely to be assertive with one another (Wilt & Revelle, 2017).

This suggests that these team members will either be discussing their view of the conflict with other team members that are not involved in the conflict or they will discuss the conflict with the involved party but the message and their stance on the conflict may not clear (Weingart et al., 2015). Also, because of the team have a high level of neuroticism, the team members of this team will often experience negative emotion which can result in the team members being irrational and less likely to listen to the other party and change their mind (Martocchio & Jimeno, 2003; Weller et al., 2018). With their indirect nature and lower tendencies to think and act rationally, the team with a low level of extraversion and high level of neuroticism will engage in conflict expression that is more passive aggressive in nature, namely, undermining.

In the hypothetical example of the team with a writing group project above, imagine instead that the team has a low level of extraversion and a high level of neuroticism. When the team member wrote their part wrong, because of the low level of extraversion, the other two team members felt that it would be awkward or difficult to be direct with the other person about the part that they have done. This was because the team has a high level of neuroticism, resulting in them being anxious about being direct with the other team member. They felt that if they chose to be direct with the other team members, they feared that the conversation might not go well, which could create more conflict and issues in the team. However, they were also very adamant about how they view the part that was written wrong and so these team members decided to keep talking about that part and how they did not like it with one another,

instead of telling the other person. In other words, this team is engaging in talking behind each other's backs, which is definitionally a form of undermining.

Hypothesis 2c: Teams with low levels of extraversion and high levels of neuroticism will engage in higher levels of undermining.

Finally, for a team with the composition that has a low level of extraversion and low level of neuroticism, these team members will choose to be indirect or unclear to the other people that are involved in the conflict (Wilt & Revelle, 2017). Also, because they are less likely to experience negative emotion (Martocchio & Jimeno, 2003), leading them to think more rationally (Weller et al., 2018) and as a result, they will be less likely to be entrenched in their opinion on the conflict. These behaviors correspond to conflict expression of disguising, in which individuals essentially hide or ignore the conflict at hand (Behfar et al., 2017).

In the same hypothetical example about the writing project team, imagine that when the team member wrote their part wrong, because of the low levels of neuroticism, the other two team members felt that there might not necessarily be anything wrong with the part that was written, or that the mistake that was done may not necessarily be alarming to the team. Because of this, the two team members did not choose to confront the team member and that they just left it as it is without saying anything. This avoidant behavior from the two team members resulting in the other team member continuing to make the same mistake in the future, and eventually, this

could harm the team performance. Therefore, a team with a low level of extraversion and low level of neuroticism is suggested to be more avoidant of the conflict, that is related to conflict expression of disguise.

Hypothesis 2d: Teams with low levels of extraversion and low levels of neuroticism will engage in higher levels of disguising.

Political Skill and Conflict Expression

It has been widely established that organizations are inherently political (Longnecker et al., 1987). Therefore, how team members express conflict may also depend on political skill of that team. A team that has a high level of political skill would suggest that the team mostly consists of team members who know how to read the interpersonal situation and navigate through them in such a way that will help them achieve their goals (Ferris et al., 2005). Therefore, it is in the best interests of these team members to minimize or resolve conflict in the team (de Dreu & Weingart, 2003). With the team having a high level of political skill, the team members of this team possess the ability to be more rational and refrain themselves from acting on negative emotion that could harm their goals (Ferris et al., 2007; Kimura et al., 2015). As a result, they will be able to engage in a constructive conversation where they can rationally discuss and share their point of view (Ferris et al., 2007). This is related to conflict expression of debating (Behfar et al., 2017). However, if there is a conflict in a team where the team members feel that it is not important or trivial to the team, the team members will choose to avoid it and continue to focus on their work, rather than

engaging in that conflict (Kimura et al., 2015). This is related to conflict expression of disguise (Behfar et al., 2017).

Meanwhile, for a team with a low level of political skill, this team will consist of individuals who may not be as likely to be able to read and understand situations well which can result in the team making rash and potentially irrational decisions (Kimura et al., 2015). Moreover, these individuals may not be able to prioritize their goals as effectively as their counterparts (i.e., individuals with high levels of political skill) (Kimura et al., 2015). As a result, they may not be able to recognize the importance of resolving the conflict or keeping it minimalized, leading them to be more likely to engage in arguing or undermining (Behfar et al., 2017).

Hypothesis 3a: Teams with higher levels of political skill will engage in higher levels of debating.

Hypothesis 3b: Teams with higher levels of political skill will engage in higher levels of disguising.

Hypothesis 3c: Teams with higher levels of political skill will engage in lower levels of arguing.

Hypothesis 3d: Teams with higher levels of political skill will engage in lower levels of undermining.

Political Skill and Escalatory Conflict Spirals

Conflict spirals can be understood as the communication process when two parties engaged in a series of conflict communication and both parties continue to respond to one another with similar kind of conflict expression (Brett et al., 1998). When the conflict expression within this conflict spiral is negative, it often leads to a situation where no conflict resolution can be achieved (Brett et al., 1998). This process of communication is called escalatory conflict spiral (Brett et al., 1998; Rubin, Pruitt, & Kim, 1994).

According to Weingart et al., (2015), two types of conflict expression can cause escalatory conflict spirals: arguing and undermining (Behfar et al., 2017). A team's composition of political skill can predict the pattern and process of this kind of conflict communication behavior. That is, the current research study argues that teams with low levels of political skill will be predictive of the change in arguing and undermining over time.

When a team with a low level of political skill engaged in arguing, team members will engage in aggressive behaviors in response such as yelling or physically fighting to force the others to submit to their views (Weingart et al., 2015). In this situation, that team has put themselves at risk of leaving the conflict unresolved (Behfar et al., 2017; Brett et al., 1998; Weingart et al., 2015). Due to the lack of political skill on the team, this situation is left as it is, with the team members continue to engage in arguing, due to them not being able to read the situation and not having

the emotional intelligence to regulate their emotion and act civilly (Ferris et al., 2007). This unresolved conflict will affect the team future performance or be transformed into other types of conflict (Greer et al., 2008; Knippen & Green, 1999).

Imagine a hypothetical example of a consulting team, in which five team members are evaluating the selection procedures for an organization., when a disagreement occurs, this team with a low level of political skill will engage in conflict expression of argue. In this case, team members engage in an argument with one another about the conflict where they raise their voice and engage in physical behavior such as slamming their hands on the table. Other team members of this team will not perceive such conflict expression behavior positively, and other team members will also engage in similar behaviors to also get their point across. At this point, all parties involved in the conflict are not willing to step down and is now in a conflict spiral where nothing is being resolved but emotions and reactions are escalating. Eventually, it is possible the conversation about this conflict shifts to a different conversation. However, when there is another conflict that emerges in the team, the team will continue with the argument pattern that they had before. This is a result of the inability to reach a solution in the previous conflict episode. Therefore, the team members of the team will continue to argue with one another and further be in this state of conflict spiral. This scenario suggests that for a team with a low level of political skill, once this team engages in any conflict episode that involves arguing, they are more likely to continue to do so and because of that, their conflict will not be resolved. Furthermore,

the unresolved conflict may continue into future episodes of conflict, and that team members will continue to argue to handle this conflict.

Hypothesis 4a: Teams with lower levels of political skill will have greater increases in arguing over time.

As hypothesized earlier, teams with lower levels of political skills are more likely to engage in undermining, and when undermining occurs, the team members of this team will engage in passive-aggressive behavior such as gossiping, ostracizing, and teasing in response to that initial undermining (Behfar et al., 2017). As a result of these behaviors, the team now functions in a hostile environments where team members are talking bad about one another (Grosser et al., 2012) and isolating those that they disagree with to have them submit to their views (Ferris et al., 2008; Weingart et al., 2015). These passive-aggressive behaviors, similar to direct aggression, also lead to the conflict being unresolved (Behfar et al., 2017; Weingart et al., 2015). Furthermore, these behaviors will involve others who are disengaged from the situation to be dragged into the conflict; this is called conflict contagion (Jehn, Rispens, Jonsen, & Greer, 2013). With the low level of political skill in the team, the team members continue not to be able to understand the magnitude of the situation, causing them to continue to engage in undermining to express conflict (Ferris et al., 2007).

Using the same hypothetical example of the consulting team above, the team members that disagree with the decision to include in a measure of general mental ability decided to gossip with other team members to say mean things about the other member's characteristic to make them look bad. This behavior triggers the team to continue to say those mean things about that team member. Once the team member found out about the gossip, they wanted to retaliate the other team member for saying mean things about them. As a result, this team member started to gossip about the other team member, creating a situation where they both continuously gossip negatively about one another.

Hypothesis 4b: Teams with lower levels of political skill will have greater increases in undermining over time.

Conflict Expression and Psychological Safety

Psychological safety is a team emergent state, which means that this construct is formed and exists since the initial formation of the team (Edmonson, 1999) but it also changes over time, and it plays a role in influencing how team members behave and communicate with one another (Peltokorpi, 2004). However, because psychological safety develops and grows over time, one could then also argue that psychological safety is also influenced by how team members behave and interact with one another in the team (Roussin, 2008). Therefore, the current study argues that psychological safety and team conflict expression concurrently emerge and change, or in other words, they are bidirectionally related.

For example, in a team that has a high initial level of psychological safety, because of this sense of interpersonal safeness in the team, team members feel that they can express their point of view without worrying about any negative backlash that would result from their act of being honest and direct (Tynan, 2005). Also, because of the sense of interpersonal safeness, team members will feel that it is okay for them to admit a mistake or accept that they are wrong and learn from it (Carmeli, 2007). When team members are willing to learn from their previous mistakes, this suggests that the team is less likely to be entrenched in their opinion and stance regarding the conflict. This corresponds to conflict expression behavior of debate (Behfar et al., 2017). Therefore, it is expected that when there is a high level of psychological safety that is perceived by the team members, the team will be more likely to engage in debate.

Relatedly, when the team engages in debate type of conflict expression, team members will feel that they are engaging in a constructive conversation about the disagreements that they have (Seyer & Vollmer, 2014). Debate is characterized by team members expressing their opinion as well as hearing other people opinion to resolve the conflict (Behfar et al., 2017). When team members express their opinion in the proper tone, that is when they communicate in a positive manner, other team members will be more willing to listen to them (Yanchus, Derickson, Moore, Bologna, & Osatuke, 2014). Because debate involves having their opinions being heard by other team members, this will trigger a sense of support to them and further enhance the sense of psychological safety (Hirak, Pang, Carmeli, & Schaubroek, 2012; Liu, Hu, Li,

Wang, & Lin, 2014). By doing this, the team members are engaging in a behavior that aims to reinforce and maintain a healthy level of psychological safety. In other words, it is expected that not only will psychological safety increase debate, but that debate will also increase psychological safety, and therefore debate and psychological safety will be mutually positively related over time.

Hypothesis 5a: Increases in debating will be bidirectionally related to increases in psychological safety over time.

On the other hand, with a team that has a low initial level of psychological safety, the team members of this team will feel that risky decisions are not welcomed in the team (Edmonson, 1999). Because of this perception and understanding, the team members will find it to be difficult to raise disagreement (Tynan, 2005), which will result in a decrease in voice behavior in the team (Bienefeld & Grote, 2014). This lack of communication in the team corresponds to conflict expression types that are lower on directness, undermining and disguising (Behfar et al., 2017). Furthermore, this low sense of psychological safety could be triggered by the way that team members express conflict with one another. Specifically, when team members express their conflict with a negative tone, such as being cocky and condescending (Yanchus et al., 2014), further discouraging the team to be able to engage in communication (Peltokorpi, 2004) and information sharing (Zhang, Fang, Wei, & Chen, 2010) which are crucial to the team functioning.

Hypothesis 5b: Increases in undermining will be bidirectionally related to decreases in psychological safety over time.

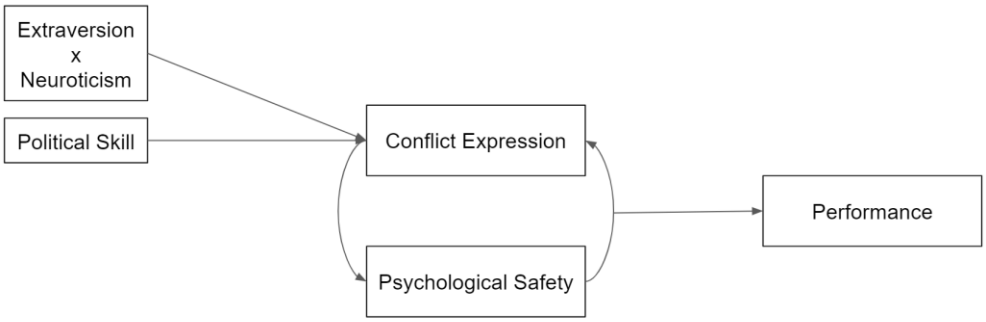

Figure 3. Current Study Model

Table 1

Summary of Study Hypotheses

Hypothesis 1a	Arguing is negatively related to team performance.
Hypothesis 1b	Debating is positively related to team performance.
Hypothesis 1c	Undermining is negatively related to team performance.
Hypothesis 1d	Disguising is negatively related to team performance.
Hypothesis 2a	Teams with high levels of extraversion and high levels of neuroticism will engage in higher levels of arguing.
Hypothesis 2b	Teams with high levels of extraversion and low levels of neuroticism will engage in higher levels of debate.
Hypothesis 2c	Teams with low levels of extraversion and high levels of neuroticism will engage in higher levels of undermining.
Hypothesis 2d	Teams with low levels of extraversion and low levels of neuroticism will engage in higher levels of disguising.
Hypothesis 3a	Team with higher levels of political skill will engage in higher levels of debating.
Hypothesis 3b	Team with higher levels of political skill will engage in higher levels of disguising.
Hypothesis 3c	Team with lower levels of political skill will engage in higher levels of arguing.
Hypothesis 3d	Team with lower levels of political skill will engage in higher levels of undermining.
Hypothesis 4a	Teams with lower levels of political skill will have greater increases in arguing over time.
Hypothesis 4b	Teams with lower levels of political skill will have greater increases in undermining over time.
Hypothesis 5a	Increases in debating will be bidirectionally related to increases in psychological safety over time.
Hypothesis 5b	Increases in undermining will be bidirectionally related to decreases in psychological safety over time.

Method

Study Sample

To investigate the hypotheses in this study, the current study used archival data from a longitudinal study conducted at a private Southeastern University in the United States. The sample of this study consisted of 24 student teams with 166 students. The students in these teams were senior year students from the university. The number of students from each team ranged from 4 to 11 team members. These student teams worked together for a year-long senior design project, in which they were required to communicate and work with one another to complete the project and earn their course credits.

Throughout the course of the study's data collection process, there were students who either did not participate in the survey or they did not respond to all questions in the survey. This pattern of response differed throughout the six survey time points of the study. This problem of missing data and no response from participants in team study have been found to be a consistent issue (Hirshfield, Cole, Bernerth, & Rizzuto, 2013). Previous research that encountered this issue have often chose to remove the teams with a low number of participants from analysis (Newman & Sin, 2009). However, the decision to remove those teams are quite problematic because the team members of these team may not choose to respond to the survey study due to the team members' negative attitude toward the team (Rogelberg, Conway, Sederburg, Spitzmuller Aziz, & Knight, 2003; Rogelberg, Luong, Sederburg,

& Cristol, 2000). Moreover, this lack of participation can bias the estimated parameters and provides inaccurate results for hypothesis testing (Newman, 2014; Newman & Sin, 2009). Therefore, the current study did not remove any teams with a low number of participation and apply recommended formulae and statistical techniques, suggested by Hirschfield and colleagues (2016) and Newman and Sin (2009), to deal with this issue. In addition, any participants who did not participate in the survey, failed to respond to the full survey, and failed the attention checks were treated as missing data.

In the first survey, which contained demographic information, 107 students reported their age. The age of these students ranged from 19 to 33, with the average age of 22 (*SD* = 2.27). One hundred and nine students reported their gender, of these students, 30 students are female (18.1 percent). One hundred and eight students reported their ethnicity. Forty two students (47.6 percent) were Caucasian, nine students (5.4 percent) were African American, 10 students (6 percent) were Hispanic, 24 students (14.5 percent) were Asian, 14 students (8.4 percent) were Middle Eastern, and nine (5.4 percent) students were Others. One hundred and seven students reported their employment status. Four students (2.4 percent) were employed full-time, 27 students (16.3 percent) were employed part-time, and one student was self-employed.

Design and Procedures

This study employed a longitudinal survey study design. The total amount of surveys that were sent out were six surveys total, with each survey being open for a

week for students to complete. Of these six surveys, the first survey contains questions that pertain to individual traits of each member in the team, and the other five surveys contain questions that pertain to a team's processes including attitudinal and cognitive. The first survey was sent out at the start of the Fall semester of 2018. Each following survey was sent out after about a month and a half after the end of the previous survey. Students were given extra credits for completing each survey. All surveys were collected online through the Qualtrics survey platform.

Missing Data Treatment

Missing data can be defined as a statistical problem due to incomplete data because of participants' decision, or failure, to not respond to one or more survey items (Newman, 2009). This decision to not respond to survey item can be intentional or unintentional (Rogelberg et al., 2003), that is they either chose to not respond to sensitive survey items or accidentally miss an item. Newman (2014) stated that there are three levels of missing data: *item-level missingness*, *construct-level missingness*, and *person-level missingness*. Item-level missingness refers to when one or more items in a survey are missing. Construct-level missingness refers to when participants did not respond to any items of a scale. And person-level missingness refers to a participant not responding to the full survey. The current study's data exhibits symptoms of missing data at all three levels.

Rubin's (1976) proposed that there are three missing data mechanisms: *missing completely at random* (MCAR), *missing at random* (MAR), and *missing not at random* (MNAR). Each of the missing data mechanism is described in Table 2 below:

Table 2.

Three Mechanisms of Missing Data

Missing Data Mechanism	Description
MCAR (missing completely at random)	The probability that a variable value is missing does not depend on the observed data values nor on the missing data values [i.e., p(missing|complete data) = p(missing)].
MAR (missing at random)	The probability that a variable value is missing partly depends on other data that are observed in the dataset, but does not depend on any of the values that are missing [i.e., p(missing|complete data) = p(missing|observed data)].
MNAR (missing not at random)	The probability that a variable value is missing depends on the missing data values themselves [i.e., p(missing|complete data) ≠ p(missing|observed data)].

Note: Table adapted from Newman (2014; p. 276).

To handle the missing data issue for each type of missingness mechanism, five methods of missing data techniques have been proposed: *listwise deletion*, *pairwise deletion*, *single imputation*, *maximum likelihood* (ML), and *multiple imputations* (MI) (Newman, 2009). Graham's (2009) asserted that: "MCAR, pure MAR, and pure MNAR really never exist because the pure form of any of these requires almost universally untenable assumptions. The best way to think of all missing data is as a

continuum between MAR and MNAR. Because all missingness is MNAR (i.e., not purely MAR), then whether it is MNAR or not should never be the issue" (p. 567). Newman (2014) agreed with this and suggested that two statistical techniques, ML and MI, can provide less biased and superior estimates than listwise deletion, pairwise deletion, and single imputation. While MI was the most common method to deal with missing data (Allison, 2002; Allison, 2009), recent research evidence suggested that ML is a better method in comparison to MI (Allison, 2012; Shin, Davison, & Long, 2017). Therefore, the current study applied ML method to deal with missing data when conducting hypothesis testing.

In addition, Newman and Sin (2009) have suggested that missing data can bias the estimates for within-group agreement and the obtained composite score for a construct. In their paper, they have outlined correction formulae to handle this issue. Newman (2009) later called this approach as *systematic nonresponse parameters* (SNPs), which involves using d_{miss} coefficient and was defined as the effect size of systematic missingness (Newman & Sin, 2009, p. 118). By using this coefficient, one can obtain less biased estimates of the within-group agreement and mean score for the construct. Hirshfield and colleagues (2013), examined MI and SNPs in comparison to the traditional method of pairwise deletion and suggested that SNPs can be used to provide better estimates than the traditional method. Newman and Sin (2009) suggested that when using this method, the study should set the d_{miss} coefficient at both -.30 and -.50 and examine the consistency across the two results. Hirschfield and

colleagues (2013), however, set the d_{miss} coefficient to be at -.30 and -.60. Because there is no single acceptable way of choosing the appropriate value for d_{miss}, the current study followed the instruction as set by Hirschfield and colleagues (2013) and set the d_{miss} coefficient at -.30 and -.60.

To adjust for the team-level mean score, the study applied the following equation (Newman & Sin, 2009, p. 121):

$$\bar{X}_{complete} = \bar{X}_{resp} + pd_{miss}s_{pooled}$$

Where $\bar{X}_{complete}$ is the adjusted mean score, $\bar{X}_{resp}$ is the mean score from the study respondent, p is the within-group nonresponse rate, and s_{pooled} is the weighted average standard deviation.

$$s_{pooled} = \sqrt{s_{resp}^2(1-p) + s_{non}^2 p}$$

Because s_{non}^2 relies on the non-respondent, the value for it was set to 0. Adjustment to the aggregation statistics was made, ICC(1) and ICC(2), based on the formulas suggested by Newman and Sin (2009, p. 127-128).

$$ICC(1) = \frac{\sigma_{B_{complete}}^2}{\sigma_{B_{complete}}^2 + \sigma_{W_{complete}}^2}$$

$$ICC(2) = \frac{k\sigma_{B_{complete}}^2}{k\sigma_{B_{complete}}^2 + \sigma_{W_{complete}}^2}$$

Where *k* is the average group size, $\sigma^2_{B_{complete}}$ is the adjusted between-group variance, and $\sigma^2_{W_{complete}}$ is the adjusted between-group variance. The formula to calculate the adjusted between and within group variance is:

$$\sigma^2_{B_{complete}} = \frac{s^2_{respB}[(1-p_B)G-1] + s^2_{nonB}(p_B G) + G s^2_{pooledB} d^2_{missB}[p_B(1-p_B)]}{G-1}$$

$$\sigma^2_{W_{complete}} = \frac{SS_W}{N-G} = \frac{\sum(X_{ij}-\bar{X}_j)^2}{N-G} = \frac{\sum_{j=1}^{G}(N_j-1)(\hat{s}^2_{complete_j})}{\sum_{j=1}^{G}(N_j-1)}$$

Where s^2_{respB} is the observed estimates of between-group variance (respondents-only), p_B is the nonresponse rate at the group-level, *G* is the total number of groups, s^2_{nonB} is the estimates of the between-group variance for the non-respondents (which was set to 0), $s^2_{pooledB}$ is the weighted variance at the group-level, *N* is the group size, *j* is the number of groups, and $\hat{s}^2_{complete_j}$ is the estimated within-group variance. Newman and Sin (2009) suggested that when the number of nonresponse rate differs across groups, the following formula should be applied to s^2_{respB}:

$$s^2_{respB} \approx s^2_{respB} - d^2_{missW}(\sigma^2_{W_{complete}} s^2_{p_W} + \overline{p_W}^2 s^2_{resp})$$

Where d_{missW} and d_{missB} are the within- and between-groups effect sizes for systematic missingness (which was set to -.30 and -.60), $s^2_{p_W}$ is the between-group variance of within-groups nonresponse rates, $\overline{p_W}^2$ is the average nonresponse rate

across groups (squared), and s^2_{resp} is the between-groups variance of observed standard deviation. Newman and Sin (2009) offered two methods of calculating $\hat{s}^2_{complete_j}$. However, they stated that "the difference between Equation 6 and 11 in terms of missing data bias is negligible, for most group sizes (n > ~3)" (p. 125). Therefore, the following formula was used to calculate the $\hat{s}^2_{complete_j}$:

$$\hat{s}_{complete} = s_{pooled}\sqrt{\{1 + d^2_{miss}[p(1-p)]\}}$$

Measures

Conflict Expression. Conflict expression was measured in the five process surveys, using the Directness and Intensity Conflict Expression (DICE) scale developed by Behfar et al. (2017), which consists of a total of 18-items. The DICE scale measures each dimension of conflict expression: argue (high directness and high intensity), debate (high directness and low intensity), undermine (low directness and high intensity), and disguise (low directness and low intensity). The argue, debate, and disguise dimensions each have three items. The undermine dimension has three sub-dimensions: dismiss, tease, and complain, with each dimension have three items, resulting in a total of nine items for the undermine dimension. The current study's Cronbach's alpha across all time points ranges from .84 to .91 for argue, .77 to .87 for debate, .93 to .95 for undermine, and .89 to .95 for disguise. As recommended by Behfar et al. (2017) that the DICE measure is "not operationalized with the assumption that conflict experiences are always a shared team property" (p. 5).

However, the current study operationalized conflict expression as a shared process for the team. Therefore, aggregation statistics was conducted for this construct.

Psychological Safety. Psychological safety was measured in the five process surveys, using Edmondson's (1999) psychological safety measure, which consists of seven items. A sample item includes, "It is difficult to ask other team members of this team for help." A high score on this construct means that the team has a stronger sense of psychological safety. The current study's Cronbach's alpha across all time points for this construct ranges from .72 to .80. Psychological safety is operationalized as a shared team level construct. Therefore, aggregation statistics was conducted for this construct before other analyses.

Political Skill. Political skill was measured in the first survey, using Ferris et al. (2005) measure of political skill, which consists of 17-items. A sample item includes, "I am good at building relationships with influential people at work." A high score on this construct means that the team has a higher composition of political skills. The current study's Cronbach's alpha for this construct is .92. Because each team member possesses a certain amount of political skill that will contribute to the team's collective pool of political skill, the current study operationalized team composition of political skill by calculating a mean score. Additionally, political skill is not a shared construct; rather, it is a patterned compositional construct. Therefore, aggregation statistics was not conducted for this construct.

Personality. Personality traits were measured in the first survey, using the Mini-IPIP scale developed by Donnellan and colleagues (2006). Extraversion trait consists of four items. A sample item for extraversion includes, "I am the life of the party." Neuroticism trait consists of four items. A sample item for neuroticism includes, "I have frequent mood swings." The current study's Cronbach's alpha for extraversion is .76 and neuroticism is .65. Because each team member possesses a certain amount of extraversion and neuroticism that will contribute to the team's collective pool of these two traits, the current study operationalized team composition of personality by calculating a mean score for each trait. Additionally, personality is not a shared construct; rather, it is a patterned compositional construct. Therefore, aggregation statistics was not conducted for this construct.

Subjective Team Performance. Performance was measured in the final survey, using the scale developed by Early and Gibson (2002). The scale consists of 12 items. A sample item for this includes, "This team meets its deadlines." The current study's Cronbach's alpha for subjective team performance is .91. Because the scale uses the team as the referent, aggregation statistics was conducted for this construct.

All items were scored on a 5-point Likert Scale (1 = Strongly Disagree to 5 = Strongly Agree). Before testing the current study's hypotheses, all scale scores were first computed at the individual level and then aggregated to the team level for analysis using group mean calculations. To support the aggregation of the individual-scores to team-level scores, the current study reported inter-rater reliability statistics,

which includes ICC(1), intraclass correlation, and ICC(2), reliability of the mean (James, 1982; Shrout & Fleiss, 1979). A high ICC(1) score indicates that a rating from an individual is likely to provide a reliable rating of the group mean, and a high ICC(2) is likely to indicate that the group-mean is a reliable estimate of the population group means (Lebrenton & Senter, 2008). Lebrenton and Senter (2008) recommended that for ICC(1), a score of .01 will have a small effect, .10 will have a medium effect, and .25 will have a large effect. Table 3 below provides a summary of the aggregation statistics for the current study.

Table 3.

Summary of Aggregation Statistics

Variable	Original		d_{miss} = -.30		d_{miss} = -.60		df_W, df_B	*F*
	ICC(1)	ICC(2)	ICC(1)	ICC(2)	ICC(1)	ICC(2)		
T2								
Psych Safety	.18	.48	.57	.90	.55	.89	24, 77	1.92*
Argue	.26	.59	.65	.92	.64	.92	24, 77	2.45**
Debate	.07	.24	.40	.81	.38	.80	24, 77	1.32
Undermine	.29	.62	.72	.94	.71	.94		2.64***
Disguise	.19	.49	.61	.91	.60	.91	24, 77	1.96*
T3								
Psych Safety	.14	.41	.47	.86	.45	.85	24, 79	1.69*
Argue	.26	.60	.59	.91	.58	.90	24, 79	2.49**
Debate	.08	.27	.41	.82	.40	.81	24, 79	1.73
Undermine	.28	.61	.59	.90	.57	.90	24, 79	2.62***
Disguise	.08	.27	.40	.82	.38	.80	24, 79	1.38
T4								
Psych Safety	.09	.29	.46	.85	.43	.84	24, 74	1.41
Argue	.12	.36	.52	.88	.50	.87	24, 73	1.57
Debate	-.07	-.35	.35	.78	.33	.77	24, 73	.74
Undermine	.01	.03	.39	.81	.37	.80	24, 73	1.03
Disguise	.01	.03	.34	.78	.32	.76	24, 73	1.03
T5								
Psych Safety	.25	.55	.71	.94	.69	.94	24, 68	2.23**
Argue	.09	.26	.51	.87	.49	.86	24, 67	1.35
Debate	-.06	-.25	.38	.80	.35	.78	24, 67	.80
Undermine	.18	.45	.64	.92	.63	.92	24, 67	1.81*
Disguise	.13	.36	.57	.90	.56	.89	24, 67	1.56
T6								
Psych Safety	.09	.27	.47	.86	.45	.85	23, 68	1.38
Argue	.24	.55	.62	.92	.61	.91	23, 67	2.23**
Debate	.09	.27	.50	.87	.48	.86	23, 66	1.37
Undermine	.19	.47	.53	.89	.52	.88	23, 66	1.87
Disguise	.06	.21	.44	.84	.42	.83	23, 66	1.26
Performance	.13	.37	.55	.89	.55	.89	23, 68	1.59

Note: *p < .05, **p < .01, ***p < .001

Analysis

All data analysis was done using R with the package lavaan and package multilevel. To test for the hypotheses, regression, growth curve modeling, and cross-lagged panel modeling were used. Specifically, hypothesis 1 and 3 were tested using linear regression. In hypothesis 1, the average of each conflict expression across all time points was used as predictors to predict subjective team performance. In hypothesis 3, team mean level of political skill was used as the predictor to predict the average of each conflict expression across all time points. Hypothesis 2 was tested using a moderated regression, using the team mean level of extraversion, neuroticism, and the interaction terms of these two variables as predictors to predict the average of each conflict expression across all time points. Hypothesis 4 was tested using latent growth modeling. Finally, hypothesis 5 was tested using a cross-lagged panel analysis. In addition, the current study used SNPs method to obtain better estimates for the team level construct. As a result, the current study consists of three datasets: unadjusted, d_{miss} = -.30, and d_{miss} = -.60. All analyses were done on these three datasets. Moreover, previous research at the team level has often used team size, team task interdependency, and team task complexity as control variables (Mathieu et al., 2008). The current study contains information related to team size but not the other two variables. Therefore, team size was used as a control variable for the analysis of the first four hypotheses.

Results

The three correlation tables of all study variables for all three datasets are reported in Appendix B.

Hypothesis Testing

Hypothesis 1. To test for the first hypothesis, a linear regression model was conducted to examine the relationship between conflict expression and subjective team performance. Each conflict expression type was averaged across six time points to create an overall measure of each conflict expression. The regression results for the first unadjusted data showed that, when controlling for team size, the three overall measure of arguing (b = -.49, $t(21)$ = -2.61, $p < .05$), undermining (b = -.59, $t(21)$ = -3.48, $p < .01$), and disguising (b = -.53, $t(21)$ = -2.97, $p < .01$) significantly negatively predicted subjective team performance. Arguing (R^2 = .24, $F(2,21)$ = 3.74, $p < .05$), undermining (R^2 = .36, F(2,21) = 6.43, p < .01), and disguising (R^2 = .29, $F(2,21)$ = 4.75, $p < .05$) all separately explained a significant portion of the variance of subjective team performance. Thus, hypothesis 1a, 1c, and 1d were supported. However, the overall measure of debating did not significant predict subjective team performance. Therefore, hypothesis 1b was not supported.

Similarly, this pattern of results was also found on the other two datasets, d_{miss} = -.30 and d_{miss} = -.60. For the dataset where d_{miss} was set to -.30, arguing (b = -.50, $t(21)$ = -2.65, $p < .05$), undermining (b = -.60, $t(21)$ = -3.45, $p < .01$), and disguising (b = -.56, $t(21)$ = -3.03, $p < .01$) significantly negatively predicted subjective team

performance. Arguing (R^2 = .25, F(2,21) = 3.8, p < .05), undermining (R^2 = .36, F(2,21) = 6.30, p < .01), and disguising (R^2 = .30, F(2,21) = 4.90, p < .05) all separately explained a significant portion of the variance of subjective team performance. For the dataset where d_{miss} was set to -.60, arguing (b = -.52, t(21) = -2.66, p < .05), undermining (b = -.61, t(21) = -3.40, p < .01), and disguising (b = -.58, t(21) = -3.05, p < .01) significantly negatively predicted subjective team performance. Arguing (R^2 = .25, F(2,21) = 3.80, p < .05), undermining (R^2 = .37, F(2,21) = 6.06, p < .01), and disguising (R^2 = .30, F(2,21) = 4.93, p < .05) all separately explained a significant portion of the variance of subjective team performance. No significant results were found for debating in both datasets. In summary, across all three datasets, arguing, undermining, and disguising negatively predicted subjective performance. Therefore, hypothesis 1a, 1c, and 1d were fully supported, but hypothesis 1b was not supported.

Table 4.

Summary of Regression Analysis Predicting Performance

	Unadjusted			d_{miss} = -.30			d_{miss} = -.60		
Variable	*b*	*SE*	*t*	*b*	*SE*	*t*	*b*	*SE*	*t*
Step 1: Control Variable									
Team Size	.03	.05	0.71	.03	.05	.67	.03	.05	.64
R^2		.02			.02			.02	
F		.50			.45			.40	
Step 2: Conflict Expression									
Arguing	-.50*	.19	-2.61	-.51*	.19	-2.65	-.52*	.19	-2.66
ΔR^2		.24			.25			.25	
F		3.74*			3.80*			3.80*	
Debating	.18	.26	.72	.21	.26	.79	.23	.27	.87
ΔR^2		.02			0.02			.03	
F		.51			0.54			.58	
Undermining	-.59**	.17	-3.48	-.60**	.17	-3.45	-.61**	.18	-3.40
ΔR^2		.36			.36			.35	
F		6.42**			6.30**			6.06**	
Disgusing	-.54**	.18	-2.97	-.56**	.18	-3.03	-.58**	.19	-3.05
ΔR^2		.29			.30			.30	
F		4.75*			4.90*			4.93*	

Note: All conflict expression types were calculated in separate regressions.
*$p < .05$, **$p < .01$, ***$p < .001$

Hypothesis 2. To test for hypothesis 2, a moderated regression was conducted on all three datasets. No significant results were found in the unadjusted and d_{miss} = -.30 dataset, suggesting that hypothesis 2 was not supported for these two datasets. However, in the third dataset where d_{miss} is set to -.60, the interaction term of extraversion and neuroticism significantly positively predicted arguing, $b = .78$, $t(19)$

= 2.15, $p < .05$. And the interaction term of extraversion and neuroticism did not account for a significant portion of the variance of arguing. In addition, the interaction term was not predictive of any other conflict expression types. Therefore, hypothesis 2 for the third data set where d_{miss} was set to -.60 was partially supported.

Hypothesis 3. The results for the unadjusted data showed that, when controlled for team size, team mean composition of political skill significantly negatively predicted conflict expression of disguising (b = -.61, $t(21)$ = -2.63, $p < .05$), arguing (b = -.63, $t(21)$ = -2.69, $p < .05$), and undermining (b = -.71, $t(19)$ = -3.12, $p < .01$). Political skill accounted for a significant amount of variance of disguising (R^2 = .25, $F(2,21)$ = 3.61, $p < .05$), arguing (R^2 = .25, $F(2,21)$ = 3.71, $p < .05$), and undermining (R^2 = .31, $F(2,21)$ = 4.98, $p < .05$). Political skill was not predictive of debating. The result of political skill predicting disguising was contrary to the current study's hypothesis 3b because the current study data suggested that political skill negatively predicted disguising. Therefore, for the unadjusted data, hypothesis 3a and 3b were not supported and hypothesis 3c and 3d were supported.

For the other two datasets, similar results were also found. For the dataset with d_{miss} set to -.30, political skill significantly negatively predicted disguising (b = -.58, $t(21)$ = -2.75, $p < .05$), arguing (b = -.62, $t(21)$ = -2.98, $p < .01$), and undermining (b = -.69, $t(21)$ = -3.39, $p < .01$). Political skill accounted for a significant amount of variance of disguising (R^2 = .26, $F(2,21)$ = 3.85, $p < .05$), arguing (R^2 = .30, $F(2,21)$ = 4.63, $p < .05$), and undermining (R^2 = .36, $F(2,21)$ = 5.83, $p < .01$). And for the dataset

with d_{miss} set to -.60, political skill significantly negatively predicted disguising (b = -.55, $t(21) = -2.83$, $p < .05$), arguing (b = -.60, $t(21) = -3.22$, $p < .01$), and undermining (b = -.66, $t(21) = -3.60$, $p < .01$). Political skill accounted for a significant amount of variance of disguising ($R^2 = .28$, $F(2,21) = 4.02$, $p < .05$), arguing ($R^2 = .32$, $F(2,21) = 5.48$, $p < .05$), and undermining ($R^2 = .38$, $F(2,21) = 6.52$, $p < .01$). Political skill did not significantly predict debating. In summary, hypothesis 3c and 3d were fully supported, and hypothesis 3a and 3b were not supported across all three datasets.

Table 5.

Summary of Political Skill Predicting Disguising

	Unadjusted			d_{miss} = -.30			d_{miss} = -.60		
	b	*SE*	*t*	*b*	*SE*	*t*	*b*	*SE*	*t*
Step 1:									
Team Size	.03	.04	.69	.02	.04	.48	.01	.04	.25
R^2		.01			.01			.01	
F		.26			.12			.12	
Step 2:									
PoliSkill	-.62*	.23	-2.62	-.58*	.21	-2.75	-.55*	.19	-2.82
R^2		.26			.27			.28	
ΔR^2		.25			.26			.27	
F		3.61*			3.85*			4.02*	

Note: All coefficients reported are at step 2 of the regression analysis.
*$p < .05$, **$p < .01$

Table 6.

Summary of Political Skill Predicting Arguing

	Unadjusted			d_{miss} = -.30			d_{miss} = -.60		
	b	*SE*	*t*	*b*	*SE*	*t*	*b*	*SE*	*t*
Step 1:									
Team Size	-.01	.04	-.32	-.02	.04	-.52	-.03	.04	-.73
R^2		.01			.01			.02	
F		.14			.27			.43	
Step 2:									
PoliSkill	-.63*	.23	-2.69	-.62**	.21	-.98	-.60**	.18	-3.22
R^2		.26			.31			.34	
ΔR^2		.25			.30			.32	
F		3.71*			4.63*			5.49*	

Note: All coefficients reported are at step 2 of the regression analysis.
*$p < .05$, **$p < .01$

Table 7.

Summary of Political Skill Predicting Undermining

	Unadjusted			d_{miss} = -.30			d_{miss} = -.60		
	b	*SE*	*t*	*b*	*SE*	*t*	*b*	*SE*	*t*
Step 1:									
Team Size	.02	.04	.61	.02	.04	0.46	.01	.04	.30
R^2		.01			.00			.00	
F		.16			.09			.04	
Step 2:									
PoliSkill	-.71	.23	-3.12	-.69**	.20	-3.39	-.66**	.18	-3.60
R^2		.32			.36			.38	
ΔR^2		.31			.36			.38	
F		4.98*			5.83**			6.51**	

Note: All coefficients reported are at step 2 of the regression analysis.
*$p < .05$, **$p < .01$

Hypothesis 4. For hypothesis 4, latent growth modeling was conducted to examine the growth trajectory of conflict expression of arguing and undermining over time. To do so, a linear growth model was constructed to examine which model with best describe the growth curve of conflict expression of arguing and undermining similar to the three models suggested by Beaujean (2014). The first model (Model 1) has a mean latent intercept that is allowed to vary, a mean latent slope, and constrained residual variances. In the second model (Model 2), the slope is allowed to vary. Finally, in the third model (Model 3), the residual variances are no longer constrained. Table 7 below describes the summary of the model fit statistics for all three models.

Across all three datasets, the model fit indices on for both conflict expression of arguing and undermining showed that model 3 has the best fit. However, it is important to point out that these estimates of these fit indices did not meet the cut-off points to be considered, except for Chi-Square. Kline (2016) recommended that when reporting model fitness indices, RMSEA, SRMR, and CFI should be reported, and the recommended cut-off for good fit for these estimates are <.08 for RMSEA, <.08 for SRMR, and ≥ .95 for CFI. While the fit indices did not meet the cut-off score, hypothesis 4 was tested using model 3, which was the model that had the best fit for the current data. However, the results of these tests should be interpreted with caution.

Table 8.

Summary of Three Latent Growth Models for Conflict Expression Across Three Datasets

	Arguing			Undermining		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Unadjusted						
Intercept Mean	2.01	1.97	2.00	2.05	2.04	2.00
Intercept Variance	.26	.34	.40	.35	.45	.40
Slope Mean		.04	-.00		.02	.04
Slope Variance	.01	.01	.02	.01	.02	.02
Covariance		-.03	-.06		-.06	-.06
df	16	14	10	16	14	10
χ^2	38.87***	34.07**	19.98*	52.63***	42.19***	35.50***
RMSEA	.24	.24	.20	.31	.29	.33
SRMR	.35	.21	.13	.62	.27	.20
CFI	.74	.77	.88	.70	.77	.79
d_{miss} = -.30						
Intercept Mean	1.97	1.93	1.96	2.01	2.00	1.94
Intercept Variance	.26	.33	.41	.34	.43	.36
Slope Mean		.04	.00		.02	.04
Slope Variance	.01	.01	.02	.01	.02	.02
Covariance		-.03	-.06		-.06	-.06
df	16	14	10	16	14	10
χ^2	37.06**	32.52**	19.09*	51.53***	41.81***	31.62***
RMSEA	.23	.24	.20	.30	.29	.30
SRMR	.32	.20	.13	.60	.28	.19
CFI	.73	.79	.90	.70	.77	.82
d_{miss} = -.60						
Intercept Mean	1.94	1.90	1.92	1.97	1.96	1.89
Intercept Variance	.26	.33	.42	.32	.41	.33
Slope Mean		.04	.01		.02	.05
Slope Variance	.01	.01	.02	.10	.02	.02
Covariance		-.30	-.06		-.05	-.05
df	16	14	10	16	14	10
χ^2	35.40**	31.16**	18.35*	51.10***	42.21***	27.58**
RMSEA	.23	.23	.19	.30	.29	.27
SRMR	.30	.19	.13	.57	.29	.18
CFI	.78	.80	.90	.70	.76	.85

*$p < .05$, **$p < .01$, ***$p < .001$

When controlling for group size, the results showed that political skill was not significantly predicting the slope of arguing for the unadjusted dataset. However, for the other two datasets where d_{miss} is set to -.30 and -.60, team mean level of political skill significantly predicted the slope of arguing, $b = .11$, $p < .05$, and $b = .11$, $p < .05$. Contrary to the hypothesized relationship between political skill and the slope of arguing, the results of this study suggested that teams with a higher level of political skill are more likely to engage in arguing over time. Thus, hypothesis 4a was not supported. Similarly, team mean level of political skill was not found to be predictive of the slope of disguising across all three datasets. Hypothesis 4b was not supported. In summary, hypothesis 4 was not supported.

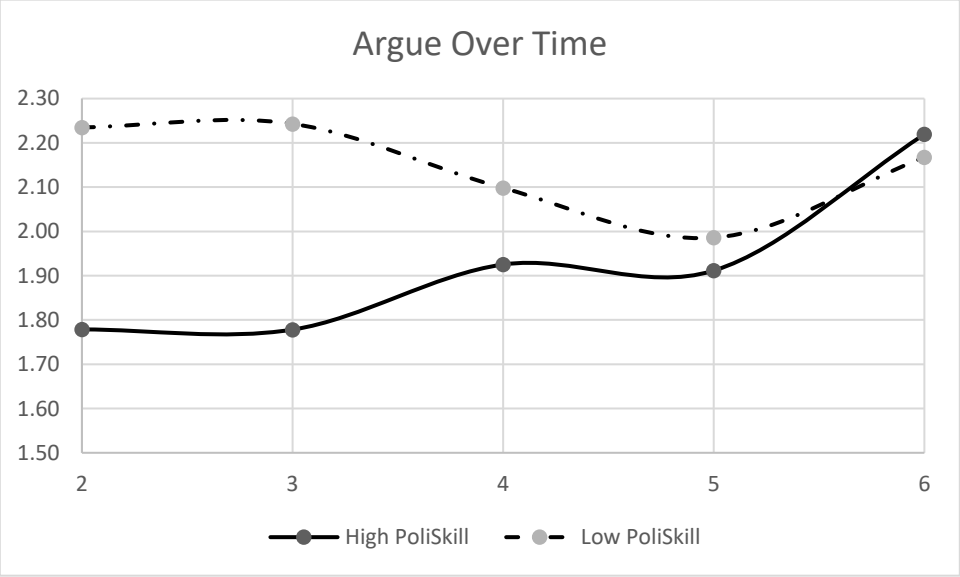

Figure 4. Growth Curve for High and Low Political Skill for Arguing

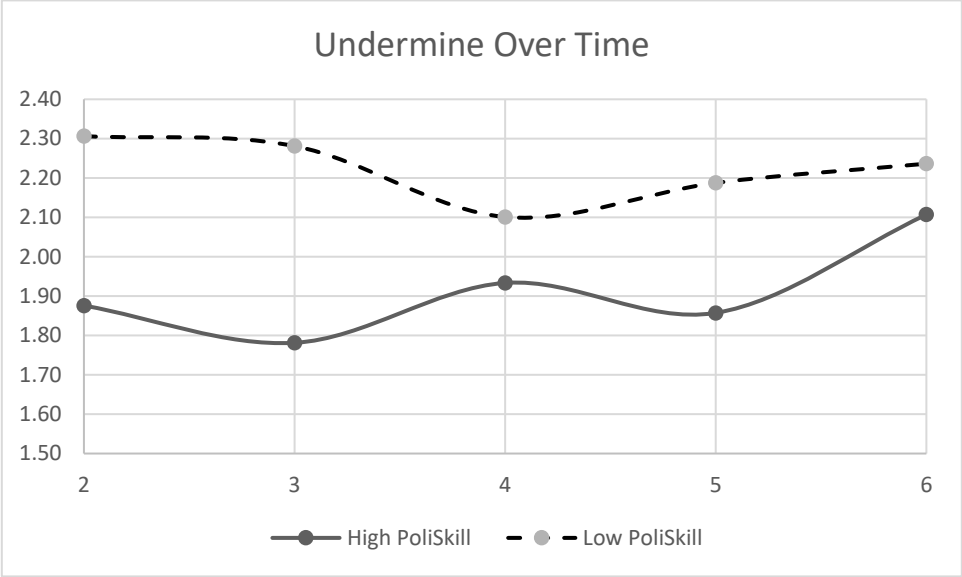

Figure 5. Growth Curve for High and Low Political Skill for Undermining

Hypothesis 5. To test for hypothesis 5, cross-lagged panel analysis was conducted. Specifically, the constructed model for the analysis include psychological safety at t + 1, and conflict expression at t + 1 regressed with psychological safety and conflict expression at time t. In addition, both the exogenous and endogenous variables were set to correlate with one another for each time point. The model fit statistics showed that, for the unadjusted data, the reported RMSEA, SRMR, and CFI were .16, .11, and .91, respectively, for the model examining arguing and psychological safety, and .19, .08, and .92, respectively, for the model examining undermining and psychological safety. For the second dataset, where d_{miss} was set to -.30, the reported RMSEA, SRMR, and CFI were .15, .11, and .93, respectively, for the model examining arguing and psychological safety, and .18, .07, and .94,

respectively, for the model examining undermining and psychological safety. Finally, for the third dataset, where d_{miss} was set to -.60, the reported RMSEA, SRMR, and CFI were .14, .11, and .93, respectively, for the model examining arguing and psychological safety, and .16, .07, and .95, respectively, for the model examining undermining and psychological safety. Based on the cut-off scores for these fit indices, these results indicated that the models were approaching a good fit, but they were not considered to be a good fit.

Table 9.

Summary of Model Fit Statistics for Hypothesis 5

	Unadjusted			d_{miss} = -.30			d_{miss} = -.60		
	RMSEA	SRMR	CFI	RMSEA	SRMR	CFI	RMSEA	SRMR	CFI
1	.16	.11	.91	.15	.11	.93	.14	.11	.93
2	.19	.08	.92	.18	.07	.94	.16	.07	.95

Note: Model 1 examined arguing and psychological safety. Model 2 examined undermining and psychological safety.

For hypothesis 5a, across all time points and all three datasets, psychological safety and debate were not significantly correlated with one another. In addition, the cross-lagged effects between T2, T3, and T4 were not significant for all three datasets. However, between T4 and T5, across all three datasets, T4 psychological safety was significantly predicting T5 debate (γ = .62, *SE* = .22, $p < .001$; γ = .59, *SE* = .20, $p <$ .01; γ = .56, *SE* = .19, $p < .01$, respectively for unadjusted, d_{miss} = -.30, and d_{miss} = -.60) but T4 debate was not significantly predicting T5 psychological safety,. Between T5

and T6, T5 debate did not significantly predict T6 psychological safety across three datasets, and T5 psychological safety did not significantly predict T6 debate in the first dataset. However, in the two other datasets, d_{miss} = -.30 and d_{miss} = -.60, T5 psychological safety significantly negatively predicted T6 debate, γ = -.29, *SE* = .14, $p < .05$ for both datasets. Taken together, the results of this study suggested that near the end of a team lifecycle, having a high level of psychological safety will negatively influence the team's conflict expression of debate. Thus, Hypothesis 5a was not supported.

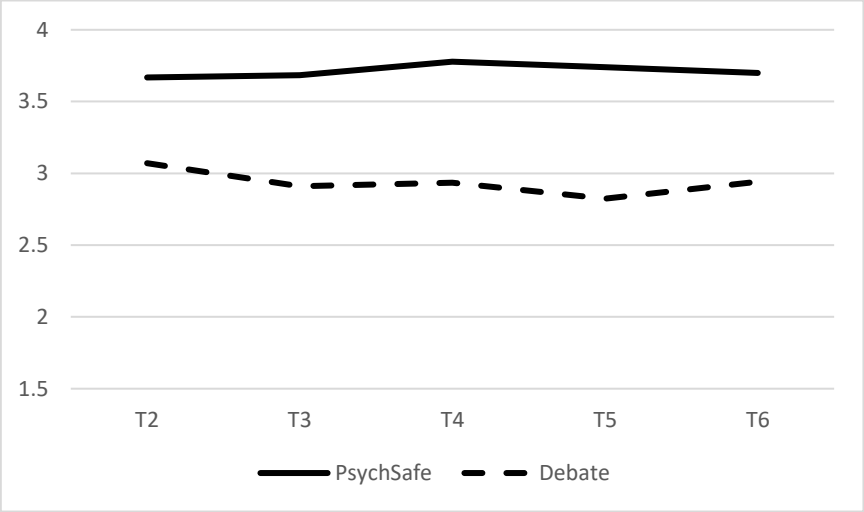

Figure 6. Relationship Between Psychological Safety and Debate over Time.

For hypothesis 5b, across all time points and all three datasets, psychological safety and undermining were significantly negatively related to one another. Between T2 and T3, T2 undermine significantly negatively predicted T3 psychological safety (γ = -.28, *SE* = .10, $p < .01$; γ = -.29, *SE* = .10, $p < .01$; γ = -.29, *SE* = .01, $p < .01$,

respectively for unadjusted, d_{miss} = -.30, and d_{miss} = -.60) and T2 psychological safety did not significantly predict T3 undermine across all three datasets. Between T4 and T5, T4 psychological safety significantly negatively predicted T5 undermine (γ = -.75, *SE* = .30, $p < .05$; γ = -.72, *SE* = .28, $p < .05$; γ = -.66, *SE* = .26, $p < .05$, respectively for unadjusted, d_{miss} = -.30, and d_{miss} = -.60) and T4 undermine did not significantly predict T5 psychological safety. No cross-lagged effects between T3 and T4, and T5 and T6 were found across all three datasets. Taken together, this results suggested during early team lifecycle, when engaging in undermining will negatively affect the development of team psychological safety. And during mid team lifecycle, having a high level of psychological safety will have team members engage in undermining less. Thus, hypothesis 5b was not supported.

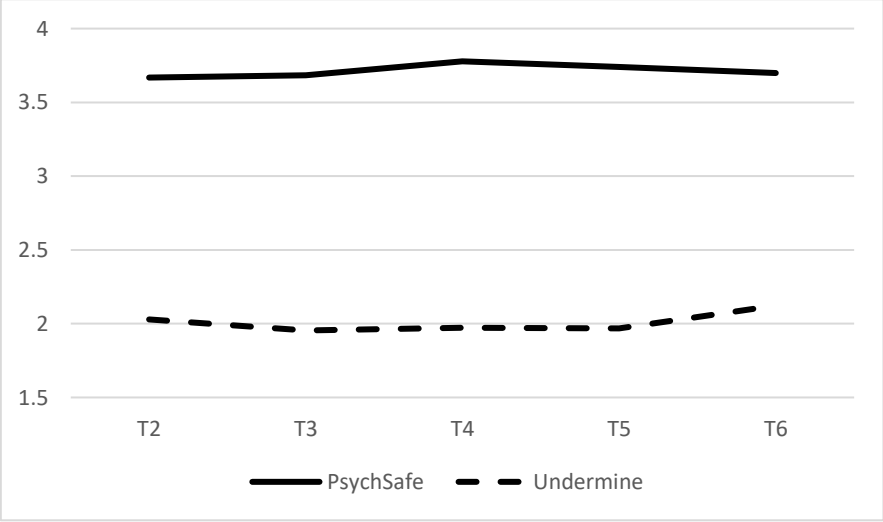

Figure 7. Relationship between Psychological Safety and Undermine over Time.

Supplemental Analyses

In addition to the analyses done for the current study's hypotheses, two additional exploratory analyses were conducted. In the first hypothesis, the current study independently examined each conflict expression predictive relationship with team performance. However, it would also be useful to examine how these four conflict expressions simultaneously predict team performance. Multiple regression was conducted to test for this relationship across all three datasets. The results of the multiple regression analysis across all three datasets showed that when using all four types of conflict expression together to predict subjective team performance, no conflict expression types were found to be predictive of subjective team performance.

The second supplementary analysis was to test the interaction between extraversion and neuroticism in predicting individual team members' perceptions of team conflict expression. A mixed effect model for multilevel modeling was constructed to account for the individual perception of conflict expression within the team. The results showed that the interaction between extraversion and neuroticism did not significantly predict team members' perception of each conflict expression.

Discussion

The conflict management literature has previously been dominated by research conflict type (Greer & Dannals, 2017), which investigates the causes of conflict and how it relates to team performance. The current study made several theoretical contributions to the conflict management literature by expanding the nomological network for the conflict expression framework by Weingart and colleagues (2015). Specifically, the current study hypothesized and tested the relationship of each conflict expression type with personality, political skill, psychological safety, and team performance.

The current study found significant results suggesting that conflict expression of arguing, undermining, and disguising are negatively related to team performance. This suggests that when team members encounter disagreement with one another, these types of conflict expressions are not helpful approaches for them to express conflict. In addition, debating was not found to be significantly related to team performance. The problem here could be that the relationship between these two would depend upon the type of conflict that the team is going under, meaning that conflict type can moderate these relationships. For example, when a team has a task conflict, having team members engaging in a debate to resolve this issue can be helpful to the team (Behfar et al., 2017). Similarly, for conflict expression of disguising, conflict type could also play a role. To be more specific, when a team is encountering a relationship conflict, it would be best for team members to avoid

engaging in this type of conflict (de Dreu & Van Vianen, 2001). Therefore, future research should examine the moderating effect of conflict type on conflict expression and team performance.

Second, the current study answered previous calls for more research on political skill at the team/group level of analysis (e.g., Kimura, 2015; Munyon et al., 2015) and found significant results for team composition of political skill in predicting conflict expression. Specifically, team mean level of political skill was found to significantly negatively predict team conflict expression of arguing, undermining, and disguising. Additionally, the current study data showed that teams with a higher level of political skill would engage in less undermining than their counterparts throughout the team lifecycle. This evidence is consistent with the current understanding of political skill.

The pattern of data over time also suggested that teams with high levels of political skill would not engage in arguing early on. However, as time goes by, the work pressure will affect these teams causing them to have conflict and engaging in arguing just as much as teams with a low level of political skill toward the end of the team's lifecycle. This evidence provides an exciting insight for future research on political skill such that, teams with a high level of political skill may not be as politically skilled as we thought, meaning that their ability to read and understand situations may diminish over time, or as pressure builds. Future research should continue to examine the possibility of this phenomenon and investigate any potential

mediating or moderating mechanism that could play a role in this case. In addition, investigating this phenomenon using other longitudinal and time series analyses such as the Latent Change Score Model (Ghisletta & McArdle, 2012) may provide other additional insights that the latent growth curve model could not.

While these results provide interesting insights, it is important to note that political skill was not found to be predictive of the growth curve of arguing and disguising. This was to be expected because the current study conducted latent growth curve modeling with a small team sample size (n = 24), which is not ideal for this type of analysis (Preacher, Wichman, MacCallum, & Briggs, 2008). Therefore, this finding should be interpreted with caution.

A practical implication can also be drawn from the significant results found regarding the positive effect of political skill on conflict expression. Specifically, organizations can use a measure of political skill as part of their selection procedure to select for team members that can express conflict more appropriately to ensure effective teamwork. However, it is important that such implementation must be done with the guidance of the *Principle for the Validation and Use of Personnel Selection Procedures* (2018).

The current study also did not find significant results in using extraversion and neuroticism in predicting conflict expression. The reason for these results could be because the current study did not have a large enough sample size to test for the

interaction effect between neuroticism and extraversion. Moreover, it could also be that our sample is range restricted because we are sampling only senior college engineering students. Future research should continue to examine the effect of personality on conflict expression with different methods of operationalizing team composition and with a larger and more diverse sample to avoid this issue.

Third, Marks et al. (2001) suggested that team processes and emergent states are often co-occurring and dynamic. Because of that, many of these processes and emergent states are likely to be bidirectionally related over time. The current study acknowledges this point and moves past the false dilemma of asking "what is the causal relationship between psychological safety and conflict." In doing so, the current study advocates for such bidirectional relationship between these variables. However, the current study also did not find clear results supporting the bidirectional relationship between psychological safety and conflict expression over time.

Regardless of the support for the hypothesis, some interesting results were found. Specifically, in the second and third dataset where d_{miss} was set to -.30 and -.60, respectively, the current study found that at the end of the team lifecycle, the team psychological safety significantly negatively predict debating. A potential explanation for this could be that, near the end of the project, the team members knew that the team would be disbanded soon and felt that there was no need for them to constructively discuss the issue that they have with one another and let the project go on as it was. As for the relationship between psychological safety and undermining,

the results were particularly more interesting such that early on, undermining negatively predicted psychological safety and at the midpoint, psychological safety negatively predicted undermine. What this means is that when team members engage in undermining early on, it could damage the development process of the team psychological safety. However, during midpoint, where they are working intensely in the team, having a high level of psychological safety can prevent team members from engaging in passive-aggressive conflict expression. Based on this finding, organizations should implement a conflict culture that encourages team members to not engage in undermining (Gelfand et al., 2012) early on to ensure effective conflict expression throughout a team lifecycle. In addition, when there is conflict in the middle of a team lifespan, implementing interventions that aim to improve the team's psychological safety can prevent team members from engaging in passive-aggressive conflict expression. However, these results and findings must be interpreted with caution due to the low sample size of the current study. Future research should still examine the possibility of the bidirectional relationship among these variables.

Last but not least, the current study was the second study that used SNPs to adjust for the mean scores obtained at the team-level of analysis. In doing so, the current study contributes to the missing data literature by investigating the different results obtained from analyzing the hypotheses across three separated datasets. As a result, the current study found that when data is treated with SNPs, the estimates found were better than had the data not been treated with SNPs. Based on this, the current

study agrees with previous research recommendations that future studies should cease the practice of deleting missing data and instead use another method of dealing with missing data such as SNPs (Hirschfield et al., 2013; Newman & Sin, 2009).

Limitations

Several limitations should be mentioned in the current study. First, the current study sample size was 24 teams. With such a low number of teams, the current study is suffered from the issue of low power when it comes to running the analysis with latent growth curve model and cross-lagged panel analysis model. Therefore, the results concerning the hypothesis using these analysis techniques should be interpreted with caution. However, it is important to note that the data collection process is ongoing. Therefore, analyses will be redone with larger sample sizes in the future.

Relatedly, the second limitation of this study is that the current study suffered from a large number of missing data. However, this issue was handled by using SNPs to deal with missing data when aggregating scores from the individual-level to team-level. Third, the current study examined conflict expression using self-report measures. Weingart and colleagues (2015) suggested that conflict expression are verbal and nonverbal behavior that directed at expressing disagreement. Future research examining conflict expression should take into consideration of using qualitative data such as diaries or observation to understand non-verbal behavior of conflict expression better.

Lastly, the current study used student team sample, which may not necessarily be generalizable to the working population. However, previous meta-analytic evidence by Wang, Waldman, and Zhang (2014) suggested that there are no significant differences between student and work sample in predicting shared leadership and team effectiveness, further lending support for using student team in studying team effectiveness.

Conclusion

Weingart and colleagues (2015) framework of conflict expression provided a useful future direction for research on conflict management. The current study expanded the nomological network for conflict expression by hypothesizing and testing the relationship of each conflict expression type with personality, political skill, psychological safety, and team performance. The results of this study found support for arguing, undermining, and disguising to be negatively related to team performance, and no support for debate was found with performance. In addition, the current study also found a negative relationship between political skill and arguing, undermining, and disguising. No support was found for the relationship between conflict expression and personality, and the bidirectional relationship with psychological safety. This is most likely due to sample size issue. Future research should continue to investigate these relationships. More importantly, future research should also examine the relationship between conflict expression and other conflict theories. By doing so, we can better understand and manage conflict in organizations.

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Appendix A: Measures

Personality

Donnellan, M. B., Oswald, F. L., Baird, B. M., & Lucas, R. E. (2006). The Mini-IPIP scales: Tiny-yet-effective measures of the Big Five factors of personality. *Psychological Assessment, 18*, 192-203.

Please indicate to what extent these statements accurately describe you. Please describe yourself as you are now, not as you wish to be in the future.

1 = Strongly Disagree

2 = Disagree

3 = Neither Agree nor Disagree

4 = Agree

5 = Strongly Agree

Extraversion.

1. I am the life of the party.
2. I don't talk a lot. (R)
3. I talk to a lot of different people at parties or gatherings.
4. I keep in the background. (R)

Neuroticism.

1. I have frequent mood swings.
2. I am relaxed most of the time.
3. I get upset easily.
4. I seldom feel sad.

Political Skill

Ferris, G. R., Treadway, D. C., Kolodinsky, R. W., Hochwarter, W. A., Kacmar, C. J., Douglas, C., & Frink, D. D. (2005). Development and validity of the political skills inventory. *Journal of Management, 31*(1), 126-152.

For the following statements, please indicate how strongly you agree or disagree.

1 = Strongly Disagree

2 = Disagree

3 = Neither Agree nor Disagree

4 = Agree

5 = Strongly Agree

1. I spend a lot of time and effort at work networking with others.
2. I am able to make most people feel comfortable and at ease around me.
3. I am able to communicate easily and effectively with others.
4. It is easy for me to develop good relationships with most people.
5. I understand people very well.
6. I am good at building relationships with influential people at work.
7. I am particularly good at sensing the motivations and hidden agendas of others.
8. When communicating with others, I try to be genuine in what I say and do.
9. At work, I know a lot of important people and am well connected.
10. I spend a lot of time at work developing connections with others.
11. I am good at getting people to like me.
12. It is important that people believe I am sincere in what I say and do.
13. I try to show a genuine interest in other people.
14. I am good at using my connections and network to make things happen at work.
15. I have good intuition about how to present myself to others.
16. I always seem to instinctively know the right things to say or do to influence others.
17. I pay close attention to people's facial expressions.

Conflict Expression

Behfar, K. J., Kim, Y., Weingart, L. R., Bendersky, C., Bear, J., Todorova, G., & Jehn, K. A. (2016). Measuring Conflict Expression: A Complementary Approach to Understanding Conflict. *Academy of Management Proceedings*, *2016*(1), 16683.

For the following statements, please indicate how strongly you agree or disagree.

1 = Strongly Disagree

2 = Disagree

3 = Neither Agree nor Disagree

4 = Agree

5 = Strongly Agree

1. We often quarrel when we have conflict.
2. We often argue when we have conflict.
3. We often fight when we have conflict.
4. We often engage in debates when we have conflict.
5. We often go back and forth presenting our counter-arguments when we have conflict.
6. We frequently deliberate when we have conflict.
7. We are often unwilling to consider one another's perspectives when we have conflict.
8. We frequently ignore one another's perspectives when we have conflict.
9. We tend to discount one another's perspectives when we have conflict.
10. We often tease one another when we have conflict.
11. We often make fun of one another when we have conflict.
12. We often make one another the target of a joke when we have conflict.
13. We often talk behind each other's backs when we have conflict.
14. We typically vent to other people when we have a conflict.
15. We usually complain to our coworkers when we have a conflict.
16. We tend to be indirect when expressing concerns when we have conflict.
17. We tend to be vague when expressing our differences during conflict.
18. We usually avoid saying what we really mean when we have conflict.

Psychological Safety

Edmondson, A. (1999). Psychological safety and learning behavior in work teams. *Administrative Science Quarterly*, *44*(2), 350-383.

For the following statements, please indicate how strongly you agree or disagree.

1 = Strongly Disagree

2 = Disagree

3 = Neither Agree nor Disagree

4 = Agree

5 = Strongly Agree

1. If you make a mistake on this team, it is often held against you. (R)
2. Members of this team are able to bring up problems and tough issues.
3. People on this team sometimes reject others for being different. (R)
4. It is safe to take a risk on this team.
5. It is difficult to ask other members of this team for help. (R)
6. No one on this team would deliberately act in a way that undermines my efforts.
7. Working with members of this team, my unique skills and talents are valued and utilized.

Subjective Team Performance

Early, P. C., & Gibson, C. B. (2002). *Multinational work teams: A new perspective*. Mahwah, NJ: Lawrence Erlbaum Associates.

For the following statements, please indicate how strongly you agree or disagree.

1 = Strongly Disagree

2 = Disagree

3 = Neither Agree nor Disagree

4 = Agree

5 = Strongly Agree

1. This team meets its deadlines.
2. This team wastes time. (R)
3. The team provides deliverables (e.g., products or services) on time.
4. This team is slow. (R)
5. This team adheres to its schedule.
6. This team finishes its work in a reasonable about of time.
7. This team has a low error rate.
8. This team does high-quality work.
9. This team consistently provides high-quality output.
10. This team is consistently error-free.
11. This team needs to improve its quality of work. (R)
12. This team will get a great grade on our final project.

Appendix B: Supplemental Material

Table 10.

Means, standard deviations, and correlations of all study variables (Unadjusted Data)

Variable	*M*	*SD*	1	2	3	4	5	6
1. Team_Size	6.64	2.45						
2. Extra	3.01	0.52	0.11					
3. Neuro	2.81	0.48	-0.02	-.44*				
4. PoliSkill	3.73	0.43	0	0.31	-0.3			
5. T2_PsySafe	3.70	0.50	0.08	-0	-.40*	.71**		
6. T2_Argue	1.98	0.69	0.12	0.19	0.39	-.54**	-.79**	
7. T2_Debate	3.12	0.53	0.15	0.31	0.12	-0.07	-0.19	0.39
8. T2_Underm	2.07	0.78	0.13	0.17	0.33	-.58**	-.82**	.81**
9. T2_Disg	2.32	0.78	0.14	0.17	0.2	-.57**	-.78**	.75**
10. T3_PsySafe	3.73	0.47	-0.14	-0.2	-0.4	.61**	.85**	-.85**
11. T3_Argue	1.98	0.64	0.04	0.21	0.25	-.55**	-.77**	.84**
12. T3_Debate	2.95	0.59	0.14	0.29	-0.1	-0.32	-.41*	.48*
13. T3_Underm	2.00	0.63	0.2	0.15	0.26	-.53**	-.74**	.72**
14. T3_Disg	2.28	0.61	0.11	0.21	0.18	-.48*	-.71**	.76**
15. T4_PsySafe	3.82	0.44	-0.02	-0.1	-0.2	.63**	.73**	-.75**
16. T4_Argue	2.00	0.58	-0.23	0.04	0.1	-.51**	-.56**	.60**
17. T4_Debate	2.97	0.53	-0.16	0.08	0.06	-0.32	-0.35	0.3
18. T4_Underm	2.01	0.44	0.2	0.03	0.27	-.46*	-.59**	.63**
19. T4_Disg	2.16	0.51	0.26	-0.1	0.18	-0.32	-0.17	0.31
20. T5_PsySafe	3.77	0.63	-0.01	-0.1	-0.2	.60**	.73**	-.70**
21. T5_Argue	1.94	0.48	0.11	0.26	-0	-0.34	-.58**	.66**
22. T5_Debate	2.88	0.59	-0.24	0.18	-0.4	.41*	.45*	-0.35
23. T5_Underm	2.00	0.69	0.04	0.15	0.01	-.56**	-.61**	.63**
24. T5_Disg	2.20	0.84	0.02	0.1	-0.1	-.48*	-.49*	.50*
25. T6_PsySafe	3.73	0.43	0.2	0.19	-.42*	0.26	0.31	-0.34
26. T6_Argue	2.22	0.76	-0.18	0.21	0.01	-0.29	-.43*	.57**
27. T6_Debate	2.99	0.67	-0.11	0.37	-0.3	0.34	0.29	-0.17
28. T6_Underm	2.17	0.56	0	-0.1	0.21	-0.34	-0.34	.48*
29. T6_Disg	2.24	0.60	0.13	-0.1	0.11	-0.11	-0.01	0.28
30. Perform	3.56	0.54	0.15	0.32	-.47*	.49*	.51*	-0.4

Note. M and *SD* are used to represent mean and standard deviation, respectively. * indicates $p < .05$. ** indicates $p < .01$.

Table 10. (cont.)

	7	8	9	10	11	12	13	14
8.	0.33							
9.	0.2	.92**						
10.	-0.21	-.85**	-.75**					
11.	0.3	.91**	.80**	-.87**				
12.	.66**	.60**	.53**	-.48*	.58**			
13.	0.25	.90**	.80**	-.89**	.89**	.58**		
14.	0.12	.83**	.80**	-.86**	.84**	.56**	.88**	
15.	-0.05	-.78**	-.81**	.77**	-.80**	-0.31	-.75**	-.70**
16.	0.19	.72**	.68**	-.51**	.73**	.43*	.62**	.63**
17.	.58**	0.36	0.29	-0.33	0.32	.54**	0.32	0.3
18.	0.03	.78**	.79**	-.67**	.74**	0.28	.78**	.74**
19.	-0.23	0.33	.45*	-0.31	0.29	0.04	0.3	.46*
20.	0	-.83**	-.84**	.76**	-.84**	-.41*	-.73**	-.74**
21.	0.08	.76**	.74**	-.63**	.81**	0.37	.71**	.79**
22.	0.3	-.49*	-.45*	.44*	-0.37	0.16	-0.38	-0.27
23.	0.06	.80**	.81**	-.66**	.82**	.48*	.74**	.80**
24.	-0.09	.64**	.70**	-.49*	.68**	0.31	.53**	.65**
25.	0.25	-0.38	-.41*	0.31	-.42*	0.07	-0.27	-0.36
26.	0.16	.45*	.51*	-0.3	.51*	0.25	0.29	.47*
27.	0.35	-0.19	-0.21	0.19	-0.11	0.21	-0.11	-0.03
28.	0.01	.53**	.56**	-0.35	.59**	0.24	.48*	.54**
29.	-0.17	0.23	0.33	-0.06	0.28	0.03	0.14	0.35
30.	-0.07	-.56**	-.54**	0.36	-.56**	-0.24	-.42*	-0.31

Note: M and *SD* are used to represent mean and standard deviation, respectively. * indicates $p < .05$. ** indicates $p < .01$.

Table 10. (cont.)

	14	15	16	17	18	19	20	21	22	23
15.	-.70**									
16.	.63**	-.75**								
17.	0.3	-0.15	0.37							
18.	.74**	-.79**	.69**	0.03						
19.	.46*	-.50*	0.35	-0.22	.69**					
20.	-.74**	.87**	-.68**	-0.15	-.71**	-.41*				
21.	.79**	-.67**	.65**	0.17	.76**	0.36	-.77**			
22.	-0.27	.44*	-0.16	.42*	-.49*	-0.37	.52**	-0.33		
23.	.80**	-.78**	.77**	0.27	.76**	.46*	-.90**	.88**	-0.32	
24.	.65**	-.68**	.68**	0.1	.69**	.53**	-.85**	.81**	-0.35	.94**
25.	-0.36	.49*	-.42*	0.26	-.61**	-.52**	.56**	-.46*	.43*	-.51*
26.	.47*	-.57**	.62**	0.06	.55**	0.37	-.56**	.71**	-0.01	.63**
27.	-0.03	0.16	0.05	.50*	-0.21	-0.19	0.18	0.01	.79**	-0.02
28.	.54**	-.62**	.73**	0.01	.82**	.64**	-.62**	.68**	-0.17	.74**
29.	0.35	-0.34	.46*	-0.21	.61**	.75**	-0.37	.48*	-0.15	.52**
30.	-0.31	.50*	-.42*	0	-.48*	-0.24	.67**	-0.39	.51*	-.55**

Note: M and *SD* are used to represent mean and standard deviation, respectively. * indicates $p < .05$. ** indicates $p < .01$.

Table 10. (cont.)

	24	25	26	27	28	29
25.	-.54**					
26.	.67**	-.49*				
27.	-0.04	0.37	0.13			
28.	.77**	-.67**	.75**	0.03		
29.	.66**	-.62**	.61**	-0.02	.85**	
30.	-.55**	.55**	-0.37	0.32	-.55**	-0.34

Note: M and *SD* are used to represent mean and standard deviation, respectively. * indicates $p < .05$. ** indicates $p < .01$.

Table 11.

Means, Standard Deviations, and Correlations of All Study Variables (Data with dmiss = -.30)

Variable	*M*	*SD*	1	2	3	4	5
1. Team_Size	6.6	2.5					
2. Extra	3	0.5	0.07				
3. Neuro	2.8	0.5	-0	-.46*			
4. PoliSkill	3.7	0.5	-0	0.27	-0.3		
5. T2_PsySafe	3.7	0.5	0.04	0.02	-.42*	.74**	
6. T2_Argue	1.9	0.7	0.1	0.19	0.36	-.58**	-.80**
7. T2_Debate	3.1	0.5	0.12	0.31	0.06	-0.12	-0.21
8. T2_Underm	2	0.8	0.11	0.16	0.3	-.63**	-.82**
9. T2_Disg	2.3	0.8	0.11	0.17	0.18	-.61**	-.77**
10. T3_PsySafe	3.7	0.5	-0.2	-0.1	-0.4	.66**	.87**
11. T3_Argue	1.9	0.6	0.01	0.19	0.23	-.60**	-.76**
12. T3_Debate	2.9	0.6	0.11	0.27	-0.1	-0.34	-.40*
13. T3_Underm	2	0.6	0.19	0.13	0.25	-.57**	-.76**
14. T3_Disg	2.2	0.6	0.08	0.19	0.16	-.51**	-.70**
15. T4_PsySafe	3.8	0.5	-0	-0.1	-0.2	.66**	.73**
16. T4_Argue	2	0.6	-0.3	0.04	0.1	-.52**	-.53**
17. T4_Debate	2.9	0.5	-0.2	0.08	0.04	-0.35	-0.38
18. T4_Underm	2	0.4	0.18	0.03	0.25	-.48*	-.61**
19. T4_Disg	2.1	0.5	0.23	-0.1	0.22	-0.32	-0.21
20. T5_PsySafe	3.7	0.6	-0	-0.1	-0.2	.62**	.71**
21. T5_Argue	1.9	0.5	0.07	0.25	-0.1	-0.36	-.54**
22. T5_Debate	2.8	0.6	-0.3	0.21	-0.4	.44*	.46*
23. T5_Underm	2	0.7	0.02	0.13	0.01	-.58**	-.57**
24. T5_Disg	2.2	0.8	-0	0.11	-0	-.50*	-.47*
25. T6_PsySafe	3.7	0.4	0.17	0.19	-.43*	0.25	0.27
26. T6_Argue	2.2	0.7	-0.2	0.25	0	-0.31	-.41*
27. T6_Debate	2.9	0.7	-0.1	.41*	-0.3	0.34	0.26
28. T6_Underm	2.1	0.6	0	-0.1	0.21	-0.36	-0.33
29. T6_Disg	2.2	0.6	0.12	-0.1	0.11	-0.11	0
30. Perform	3.5	0.6	0.14	0.34	-.48*	.49*	.47*

Note. M and *SD* are used to represent mean and standard deviation, respectively. * indicates $p < .05$. ** indicates $p < .01$.

Table 11. (cont.)

	6	7	8	9	10	11	12	13	14	15
7.	0.38									
8.	.82**	0.33								
9.	.76**	0.2	.93**							
10.	-.85**	-0.24	-.86**	-.76**						
11.	.84**	0.29	.91**	.81**	-.85**					
12.	.47*	.67**	.58**	.51**	-.49*	.56**				
13.	.72**	0.21	.89**	.79**	-.90**	.89**	.55**			
14.	.76**	0.08	.82**	.80**	-.84**	.84**	.53**	.87**		
15.	-.77**	-0.1	-.80**	-.84**	.78**	-.82**	-0.32	-.76**	-.71**	
16.	.59**	0.17	.72**	.69**	-.50*	.73**	0.39	.62**	.62**	-.75**
17.	0.3	.57**	0.35	0.28	-0.35	0.31	.53**	0.3	0.27	-0.18
18.	.63**	0	.80**	.80**	-.69**	.76**	0.28	.81**	.76**	-.80**
19.	0.32	-0.25	0.36	.47*	-0.34	0.32	0.03	0.35	.50*	-.51**
20.	-.72**	-0.02	-.84**	-.86**	.75**	-.86**	-0.39	-.73**	-.76**	.89**
21.	.64**	0.07	.75**	.73**	-.60**	.81**	0.34	.70**	.78**	-.68**
22.	-0.38	0.29	-.50*	-.46*	.46*	-0.38	0.17	-.40*	-0.29	.44*
23.	.62**	0.06	.80**	.81**	-.65**	.83**	.46*	.73**	.80**	-.79**
24.	.51**	-0.07	.65**	.71**	-.50*	.71**	0.29	.55**	.68**	-.71**
25.	-0.33	0.25	-0.37	-.41*	0.26	-.42*	0.08	-0.3	-.41*	.47*
26.	.59**	0.19	.48*	.54**	-0.3	.55**	0.26	0.31	.51*	-.59**
27.	-0.15	0.37	-0.18	-0.21	0.17	-0.11	0.24	-0.12	-0.03	0.14
28.	.48*	0.01	.55**	.57**	-0.36	.62**	0.24	.50*	.57**	-.64**
29.	0.27	-0.16	0.25	0.34	-0.06	0.31	0.03	0.16	0.38	-0.34
30.	-0.39	-0.06	-.55**	-.54**	0.35	-.56**	-0.22	-.42*	-0.32	.52**

Note. M and *SD* are used to represent mean and standard deviation, respectively. * indicates $p < .05$. ** indicates $p < .01$.

Table 11. (cont.)

	16	17	18	19	20	21	22	23	24	25
17.	0.38									
18.	.68**	0.04								
19.	0.36	-0.2	.70**							
20.	-.69**	-0.2	-.74**	-.45*						
21.	.64**	0.16	.76**	0.35	-.79**					
22.	-0.17	.40*	-.51**	-.41*	.51**	-0.32				
23.	.77**	0.28	.77**	.48*	-.91**	.88**	-0.31			
24.	.69**	0.12	.70**	.52**	-.87**	.83**	-0.32	.95**		
25.	-.41*	0.28	-.61**	-.56**	.55**	-.45*	.42*	-.50*	-.54**	
26.	.62**	0.06	.53**	0.36	-.61**	.71**	-0.03	.63**	.69**	-.50*
27.	0.04	.50*	-0.22	-0.22	0.18	0.01	.80**	-0.01	-0.03	0.37
28.	.72**	0.02	.80**	.65**	-.64**	.68**	-0.18	.75**	.78**	-.68**
29.	.45*	-0.2	.59**	.73**	-0.4	.47*	-0.14	.53**	.65**	-.63**
30.	-.43*	0.02	-.49*	-0.28	.66**	-.41*	.49*	-.56**	-.56**	.55**

Note. M and *SD* are used to represent mean and standard deviation, respectively. * indicates $p < .05$. ** indicates $p < .01$.

Table 11. (cont.)

	26	27	28	29
27.	0.12			
28.	.74**	0.02		
29.	.60**	-0	.86**	
30.	-0.39	0.32	-.57**	-0.4

Note. M and *SD* are used to represent mean and standard deviation, respectively. * indicates $p < .05$. ** indicates $p < .01$.

Table 12.

Means, Standard Deviations, and Correlations of All Study Variables (Data with dmiss = -.60)

Variable	*M*	*SD*	1	2	3	4	5
1. Team_Size	6.64	2.45					
2. Extra	2.89	0.53	0.04				
3. Neuro	2.72	0.48	-0.06	-.47*			
4. PoliSkill	3.64	0.5	-0.02	0.24	-0.3		
5. T2_PsySafe	3.63	0.53	0	0.05	-.42*	.77**	
6. T2_Argue	1.91	0.7	0.09	0.19	0.33	-.61**	-.80**
7. T2_Debate	3.02	0.53	0.09	0.32	0	-0.16	-0.22
8. T2_Underm	1.99	0.78	0.09	0.15	0.28	-.67**	-.81**
9. T2_Disg	2.23	0.77	0.09	0.17	0.16	-.65**	-.76**
10. T3_PsySafe	3.64	0.55	-0.2	-0.11	-0.35	.70**	.88**
11. T3_Argue	1.9	0.63	-0.03	0.17	0.22	-.64**	-.73**
12. T3_Debate	2.87	0.58	0.08	0.25	-0.16	-0.36	-0.39
13. T3_Underm	1.91	0.56	0.17	0.11	0.23	-.59**	-.76**
14. T3_Disg	2.15	0.54	0.04	0.18	0.14	-.51**	-.68**
15. T4_PsySafe	3.74	0.5	-0.04	-0.11	-0.25	.68**	.72**
16. T4_Argue	1.93	0.6	-0.29	0.05	0.1	-.53**	-.49*
17. T4_Debate	2.9	0.55	-0.21	0.07	0.01	-0.38	-.40*
18. T4_Underm	1.94	0.44	0.15	0.02	0.23	-.50*	-.62**
19. T4_Disg	2.06	0.49	0.21	-0.05	0.26	-0.32	-0.24
20. T5_PsySafe	3.71	0.62	-0.02	-0.14	-0.18	.64**	.68**
21. T5_Argue	1.89	0.48	0.04	0.23	-0.1	-0.37	-.49*
22. T5_Debate	2.77	0.6	-0.33	0.24	-.41*	.47*	.47*
23. T5_Underm	1.93	0.7	-0.01	0.12	0.01	-.58**	-.54**
24. T5_Disg	2.1	0.84	-0.04	0.11	-0.02	-.50*	-.45*
25. T6_PsySafe	3.66	0.44	0.14	0.19	-.44*	0.23	0.23
26. T6_Argue	2.12	0.72	-0.2	0.28	-0.01	-0.32	-0.37
27. T6_Debate	2.89	0.69	-0.16	.43*	-0.3	0.32	0.24
28. T6_Underm	2.08	0.55	-0.01	-0.06	0.21	-0.37	-0.3
29. T6_Disg	2.13	0.58	0.11	-0.08	0.13	-0.12	0.02
30. Perform	3.49	0.55	0.13	0.36	-.49*	.48*	.42*

Note. M and *SD* are used to represent mean and standard deviation, respectively. * indicates $p < .05$. ** indicates $p < .01$.

Table 12. (cont.)

	6	7	8	9	10	11	12	13	14	15
7.	0.38									
8.	.82**	0.33								
9.	.77**	0.2	.93**							
10.	-.84**	-0.26	-.86**	-.76**						
11.	.83**	0.27	.91**	.82**	-.83**					
12.	.45*	.69**	.56**	.49*	-.49*	.53**				
13.	.72**	0.17	.88**	.79**	-.89**	.88**	.52**			
14.	.76**	0.05	.80**	.79**	-.80**	.84**	.49*	.86**		
15.	-.77**	-0.13	-.81**	-.85**	.78**	-.82**	-0.33	-.76**	-.70**	
16.	.58**	0.15	.72**	.70**	-.48*	.73**	0.35	.61**	.61**	-.74**
17.	0.29	.55**	0.34	0.28	-0.36	0.3	.51**	0.27	0.23	-0.2
18.	.62**	-0.02	.81**	.81**	-.70**	.78**	0.28	.83**	.78**	-.80**
19.	0.33	-0.27	0.38	.49*	-0.36	0.36	0.01	.40*	.53**	-.51**
20.	-.73**	-0.05	-.84**	-.87**	.74**	-.87**	-0.37	-.74**	-.77**	.90**
21.	.61**	0.07	.73**	.72**	-.57**	.80**	0.31	.69**	.77**	-.68**
22.	-.40*	0.28	-.51**	-.46*	.48*	-0.38	0.17	-.42*	-0.31	.43*
23.	.60**	0.06	.79**	.81**	-.63**	.84**	.44*	.73**	.80**	-.79**
24.	.53**	-0.05	.67**	.73**	-.50*	.75**	0.28	.57**	.70**	-.73**
25.	-0.32	0.25	-0.36	-.41*	0.23	-.43*	0.08	-0.32	-.47*	.46*
26.	.61**	0.21	.51*	.57**	-0.3	.58**	0.27	0.33	.54**	-.61**
27.	-0.13	0.4	-0.17	-0.2	0.15	-0.1	0.27	-0.13	-0.04	0.12
28.	.47*	0.01	.56**	.58**	-0.36	.64**	0.24	.52**	.60**	-.64**
29.	0.26	-0.15	0.26	0.34	-0.06	0.33	0.02	0.19	.41*	-0.34
30.	-0.37	-0.04	-.54**	-.53**	0.33	-.56**	-0.2	-.42*	-0.33	.53**

Note. *M* and *SD* are used to represent mean and standard deviation, respectively. * indicates $p < .05$. ** indicates $p < .01$.

Table 12. (cont.)

	16	17	18	19	20	21	22	23	24	25
17.	0.39									
18.	.68**	0.06								
19.	0.36	-0.18	.70**							
20.	-.69**	-0.14	-.76**	-.48*						
21.	.64**	0.16	.75**	0.34	-.80**					
22.	-0.16	0.38	-.52**	-.44*	.49*	-0.29				
23.	.77**	0.29	.78**	.49*	-.91**	.87**	-0.29			
24.	.70**	0.15	.72**	.52**	-.88**	.84**	-0.3	.95**		
25.	-0.38	0.29	-.60**	-.58**	.55**	-.44*	0.4	-.49*	-.54**	
26.	.61**	0.06	.52**	0.34	-.65**	.72**	-0.05	.64**	.70**	-.50*
27.	0.04	.50*	-0.23	-0.24	0.17	0.02	.81**	-0.01	-0.02	0.36
28.	.71**	0.04	.79**	.65**	-.66**	.68**	-0.18	.76**	.79**	-.67**
29.	.45*	-0.16	.56**	.70**	-.41*	.45*	-0.13	.54**	.65**	-.62**
30.	-.43*	0.04	-.49*	-0.31	.64**	-.41*	.46*	-.56**	-.57**	.55**

Note. M and *SD* are used to represent mean and standard deviation, respectively. * indicates $p < .05$. ** indicates $p < .01$.

Table 12. (cont.)

	26	27	28	29
27.	0.11			
28.	.73**	0.01		
29.	.58**	0	.87**	
30.	-.41*	0.32	-.58**	-0.37

Note. M and *SD* are used to represent mean and standard deviation, respectively. * indicates $p < .05$. ** indicates $p < .01$.

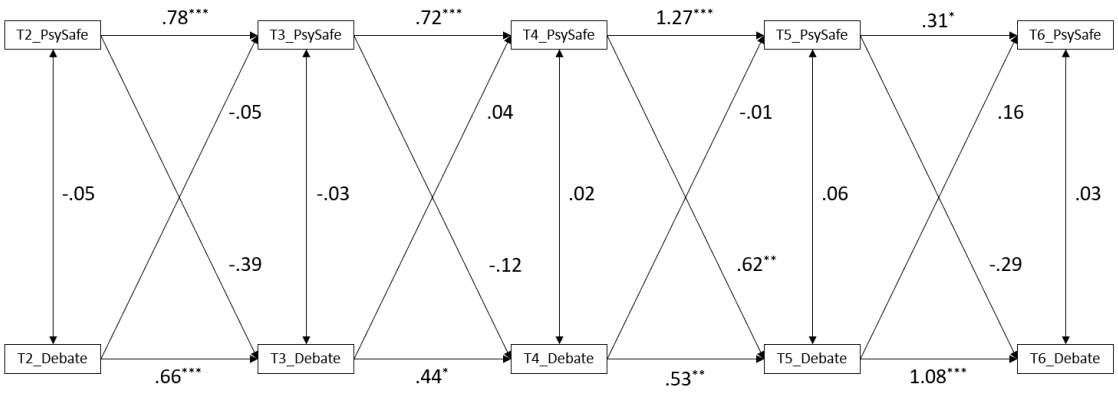

Figure 8. Cross-lagged panel path between Psychological Safety and Debate over Time for Unadjusted Dataset

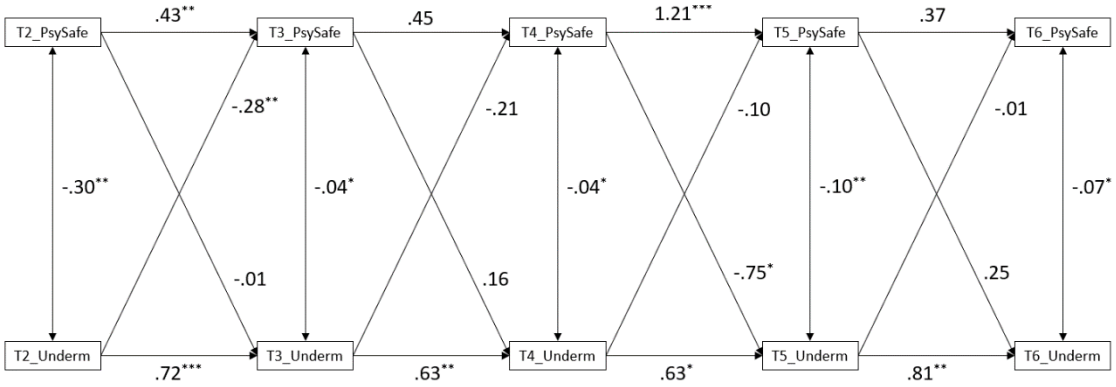

Figure 9. Cross-lagged panel path between Psychological Safety and Undermine over Time for Unadjusted Dataset

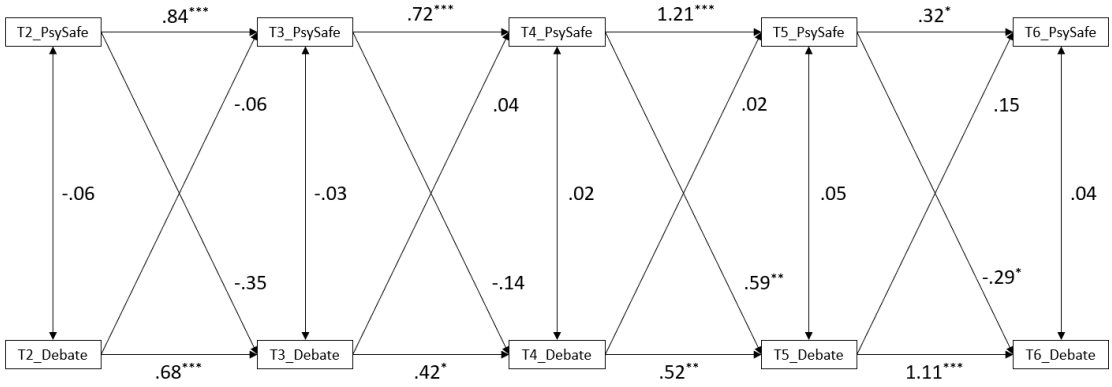

Figure 10. Cross-lagged panel path between Psychological Safety and Debate over Time for Dataset with d_{miss} = .-30

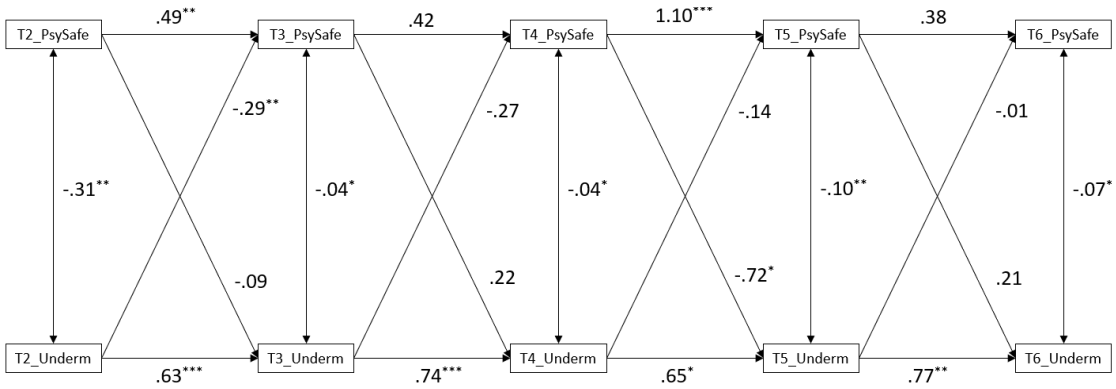

Figure 11. Cross-lagged panel path between Psychological Safety and Undermine over Time for Dataset with d_{miss} = .-30

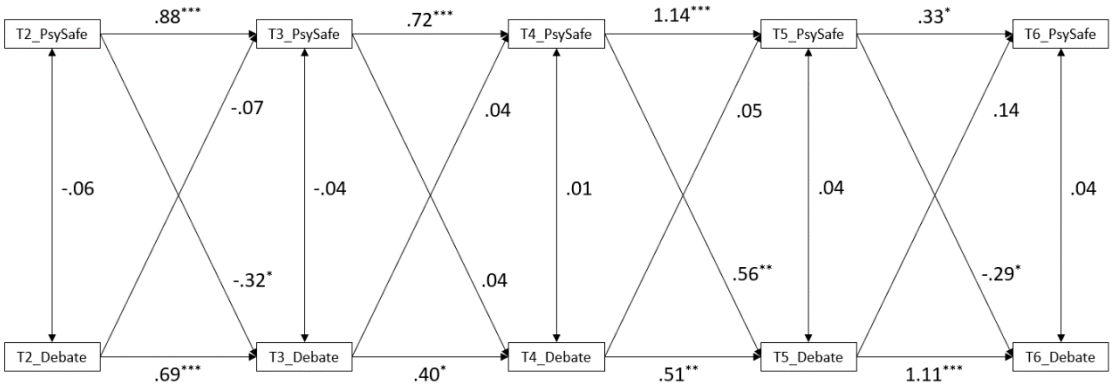

Figure 12. Cross-lagged panel path between Psychological Safety and Debate over Time for Dataset with d_{miss} = .-60

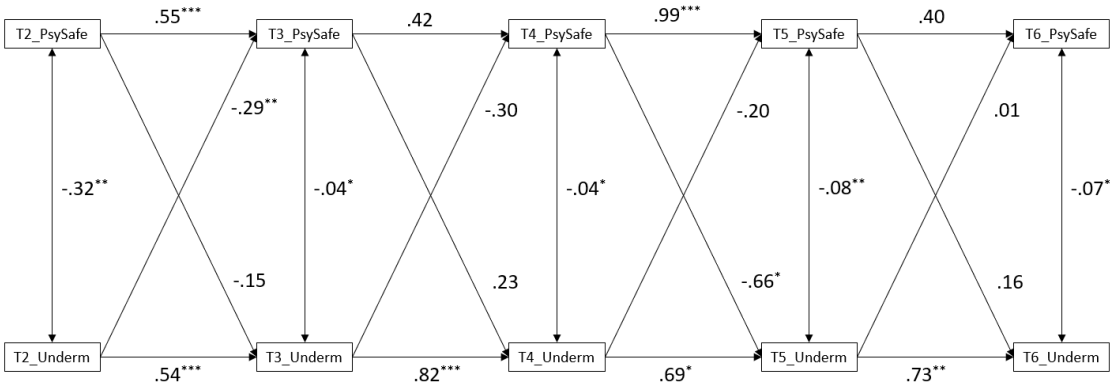

Figure 13. Cross-lagged panel path between Psychological Safety and Undermine over Time for Dataset with d_{miss} = .-60