An Exploratory Analysis of Physiological Arousal and Verbal Behaviours during Conflicts within Mono- and Multicultural Agile Teams and Their Impact on Job Performance

Master Thesis

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03-07-2024

Version 1

International Management & Consultancy

MSc Business Administration

Behavioural, Management and Social Sciences

University of Twente

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Acknowledgements

First and foremost, I would like to thank my first supervisor Dr. L. Carminati for her incredible guidance throughout this project. Furthermore, I would also like to thank Dr. D. H. van Dun for her insightful ideas and helpful feedback. I could not have accomplished these results without their valuable guidance and support. Thank you both!

Abstract

Conflicts are an inherent part of Agile team dynamics and can strongly affect performance. Yet, there has been limited exploration of how this relationship functions at the individual level through verbal behaviours and physiological responses. Despite growing calls for an objective and integrative approach combining behavioural components with human physiological processes to examine organisational, team or individual outcomes, this approach remains uncommon in organisational research. Therefore, the primary objective of this study is to examine the relationship between observed verbal behaviours and within-person physiological arousal during conflict situations in sprint planning and retrospective meetings of mono- and multicultural Agile teams, and their impact on job performance. This exploratory research utilised a mixed-method approach, integrating multimodal, frequency, comparative and episode analyses, and triangulated three types of data: video-coded verbal behaviours, physiological arousal levels captured through skin sensors, and expert performance ratings. The findings reveal two main pathways through which conflicts unfold: escalatory and de-escalatory conflict processes. Escalatory conflict processes involve negative relations-oriented behaviours, frequent and strong physiological responses and high-expression intensity, all of which mutually reinforce each other, leading to further escalation and a detrimental impact on performance. In contrast, de-escalatory conflict processes are characterised by more neutral task- and change-oriented behaviours, evoking less intense emotions and leading to low-intensity conflicts, resulting in more beneficial effects on performance. Cultural diversity influences how these conflicts develop. Monocultural teams are more likely to experience de-escalatory conflict processes by adopting positive relations-oriented behaviours, such as humour, and collectivistic conflict management approaches. On the other hand, multicultural teams have a higher likelihood of experiencing escalatory conflict processes, often engaging in excessive task-oriented behaviours and encountering misunderstandings. Furthermore, the findings indicate no significant difference in arousal levels between individuals directly involved in the conflict and those who are not involved, signalling that tensions caused by conflicts are felt by all team members. Thus, this suggests that conflict is pervasive, with tensions potentially spreading through emotional contagion Moreover, an individual's display of more positive relations-oriented verbal behaviour is linked to higher job performance. These high-performing individuals also showed heightened alertness during conflicts, as evidenced by more frequent and stronger physiological responses. The retrospective meeting emerged as particularly critical, acting as a conducive environment to more harmful conflicts affecting job performance, with performance level distinctions among high- versus low-performing individuals becoming more pronounced. This study extends the current understanding of conflicts within Agile teams by highlighting how conflicts unfold at the individual level through observed verbal behaviours and establishing a link between individual-level verbal behaviours, within-person physiological arousal and job performance within teams. Organisations and Agile team members should recognise the differences in conflict perception and expression between mono- and multicultural teams and adjust their verbal behaviours and conflict management strategies accordingly. To improve job performance, individuals should prioritise positive relations-oriented behaviours while minimising negative relations-oriented behaviours and remain alert and responsive to social cues during conflicts. The findings underscore the importance of effective conflict management for organisations to leverage the positive effects of conflicts and enhance job performance.

Keywords:

Agile, Conflict, Cultural Diversity, Job Performance, Physiological Arousal, Verbal Behaviour

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1. Introduction

In today's volatile, uncertain, complex and ambiguous business landscape, it has become crucial for organisations to be highly flexible and adaptable (Schoemaker et al., 2018). Organisations are continuously searching for methods to enhance collaboration, efficiency and their overall performance. Over the years, a multitude of methods have been developed to address these demands, one of which is the Agile methodology. The Agile way of working has been linked to increased team performance (Peeters et al., 2022), enhanced communication (Dingsøyr et al., 2018), and improved customer-centric collaboration (Dybå & Dingsøyr, 2008). While first developed in the software industry (Hoda et al., 2018), the Agile way of working is nowadays being adopted across various sectors including health care, manufacturing and logistics (Koch et al., 2023). Within the Agile methodology, individuals are assigned to multi-disciplinary teams (Malik & Orr, 2022) operating with a shared leadership model (Magpili & Pazos, 2018). Crucial to the success of these Agile teams are thus the aspects of team communication and collaboration (Yousef, 2023).

Like any other team where communication and collaboration are central, Agile teams may experience conflicts (Todorova et al., 2022). As indicated by Tuckman's (1965) stage model of group development, teams need to pass the 'storming' stage where they deal with differences in values and perspectives, often resulting in conflicts, before achieving team cohesion. The body of literature on these team conflicts is extensive (e.g., De Dreu & Weingart, 2003; De Wit et al., 2012; Greer & Dannals, 2017; Todorova et al., 2022) and one of the most influential conflict typologies is Jehn's (1995, 1997) distinction between task conflict, referring to disagreements about the content of the task, relationship conflict, focusing on interpersonal incompatibilities, and the subsequently introduced process conflict, regarding the execution of the tasks.

This typology aligns with what the literature calls conflict *states* (DeChurch et al., 2013). However, conflict states do not exist on their own, they are intricately linked to team conflict *processes,* also known as conflict management (DeChurch et al., 2013; Todorova et al., 2022). Conflict management can alter the effect of conflict states on team-level outcomes, such as team cohesion and team satisfaction (Tekleab et al., 2009). Hence, both conflict states, composed of conflict types and intensities, and conflict processes, i.e., how the team members handle the conflict, should be considered, when investigating conflict situations (Todorova et al., 2022).

Furthermore, the team's interpretation of conflict types and intensities, along with their approach to managing conflicts, may be influenced by the team's cultural diversity (Krueger et al., 2022; Triana et al., 2021; Weingart et al., 2015). Cultural heterogeneity within a team inherently boosts the potential for conflict situations, especially in the case of task conflicts (Stahl et al., 2010). Stahl and colleagues (2010) found the differences in values, norms, behaviours and communication styles present in culturally diverse teams to increase irritation, misunderstandings and conflict. Similarly, previous research indicated that diverse cultural backgrounds among team members could lead to variations in individual preferred conflict management strategies, changing how the team navigates and resolves conflicts (Ayoko, 2007; Kaushal & Kwantes, 2006), ultimately impacting the team member's performance (DeChurch et al., 2013; Todorova et al., 2022).

The team's approach to conflict management is reflected in their verbal behaviour during and right after the conflict situation. Since Agile teams tend to operate with a shared leadership model, all team members eventually show verbal leadership behaviours (Magpili & Pazos, 2018). These verbal behaviours can be divided into three meta-categories: task-oriented, relations-oriented, and change-oriented leadership behaviours (Borgmann et al., 2016; Yukl et al., 2002; Yukl, 2012; Yukl et al., 2019). Considering that cultural diversity can impact how the team members perceive the conflict state (i.e., intensity and type) and how they manage the conflict, mono- and multicultural Agile teams may display different verbal leadership behaviours during situations of conflict.

However, previous research has suggested that these verbal behaviours are connected with within-person physiological processes (e.g., Christopoulos et al., 2019; Erez et al., 2008; Hoogeboom et al., 2021), indicated by for example heart rate, blood pressure and perspiration (Deits-Lebehn et al., 2020). Despite a rising number of researchers calling for an integrative approach combining behavioural components with human physiological processes to examine organisational, team or individual outcomes, this approach remains uncommon in organisational research (Arvey & Zhang, 2015; Christopoulos et al., 2019). Hence, integrating skin conductance responses with observed verbal behaviours can yield valuable insights into the differences between mono- and multicultural teams during conflict situations and the impact of these differences on the team member's job performance.

Furthermore, while the existing body of literature on the interplay between team conflict and cultural diversity is substantial (Schmidt et al., 2023; Jehn et al., 2008), the majority focuses on the impact of cultural diversity on team-level outcomes (Mannix & Neale, 2005; Stahl et al., 2010; Triana et al., 2021). Only a few studies have concentrated on how conflicts may manifest differently in mono- and multicultural teams (Behfar et al., 2006; Krueger et al., 2022), and even fewer linked this to verbal behaviour. Furthermore, even though verbal behaviour and psychological arousal may be intertwined (Christopoulos et al., 2019; Hoogeboom et al., 2021), the question of how psychological arousal might co-occur with these verbal behaviours in the context of conflict situations has yet to be answered. This leads to the crucial point that there is a noticeable lack of diverse methodologies in team conflict research, which to date has mostly relied on survey-based data (Zhao et al., 2019). Yet, this method of data collection relying on retrospective self-assessments may be exposed to self-report bias (Lucas & Baird, 2006), where participants may (un)intentionally alter their responses due to cognitive processes, survey conditions or social desirability, potentially leading to random or systematic misreporting (Bauhoff, 2014). Hence, this thesis answers previous research calls for more objective and diverse methods when investigating team conflict: Firstly, by utilising the fairly unique method of video observations to fully capture the participants' verbal behaviour in the real-life workplace; Secondly, by simultaneously examining verbal behaviour and physiological arousal objectively measured through high-quality skin conductance responses; Thirdly, by triangulating these two types of data with expert performance ratings to create robust and detailed research on team conflict in mono- and multicultural Agile teams.

Therefore, this research aims to investigate the relationship between verbal behaviours during conflict situations in sprint planning and retrospective meetings and within-person physiological arousal with a focus on the potential variations between mono-cultural and multicultural Agile teams and their effects on individual job performance. This leads to the formulation of the following research question:

How do the physiological arousal and verbal behaviours of Agile team members during situations of conflict in sprint planning and retrospective meetings differ between monocultural and multicultural teams and impact the team members' job performance?

The answers to this research question contribute to the literature on team conflict, in particular in the context of culturally diverse Agile teams, by delving into the co-occurring verbal behaviours and within-person physiological processes that take place during situations of conflict. By simultaneously analysing time-stamped verbal behaviours and co-occurring skin conductance responses using non-obtrusive measures in real-life workplace situations, this study advances the knowledge of what exactly happens during conflicts instead of relying on participants' retrospective self-assessments, hypothetical situations or survey scores (Baumeister et al., 2007; Zhao et al., 2019). Furthermore, this study provides further insights into physiological processes in the workplace, a field that remains underdeveloped in organisational research (Arvey & Zhang, 2015; Christopoulos et al., 2019).

In addition to its theoretical contributions, this thesis also offers valuable practical implications. By examining the verbal behaviours displayed during conflict situations, this study provides managers and team members with practical insights on what behaviours are beneficial for constructive conflict

development and management, and what behaviours have a detrimental effect on conflict progression and should thus be avoided. Moreover, it enhances managers' awareness of differences in conflict perception and conflict management approaches between culturally diverse and culturally homogeneous teams and how these can be used to the team's advantage, thereby minimising the potential for misunderstandings and decreased performance (Tiana et al., 2021). In the end, how the team perceives and handles their conflicts can have a significant impact on their performance levels (DeChurch et al., 2013; Greer & Dannals, 2017). By understanding the individual behaviours and within-person physiological processes during conflict situations, both managers and team members gain insights into what behaviours and processes enhance or hinder their job performance, empowering them to adapt the team's perception of conflicts and their verbal behaviour patterns, ultimately leading to improved team performance.

This report is organised as follows. In section two, the literature is discussed, followed by a description of the methodology in section three. Subsequently, section four presents the results, section five discusses the findings, elaborating on their theoretical and practical implications, and section six reflects on their strengths and limitations. Finally, the report concludes by addressing the research question and offering potential avenues for future research.

2. Theoretical Framework

This section starts with a discussion of the Agile methodology, followed by a discussion of the existing literature on team conflict. Furthermore, this section delves into the research on cultural diversity and verbal leadership behaviours. Lastly, this section concludes with an overview of the literature on physiological arousal in organisational research.

2.1 Agile Methodology

The roots of the Agile methodology can be traced back to the software development industry (Koch et al., 2023). At the time, the prevailing belief in the software development industry was that every problem has a logical, clear and optimal solution (Nerur et al., 2005). However, in the 1990s the software development industry encountered a growing number of challenges marked by environmental shifts and evolving customer demands (Koch et al., 2023). In response to these challenges, the Agile way of working emerged, emphasising its ability to dynamically and effectively respond to change (Serrador & Pinto, 2015). The Agile methodology serves as an umbrella term encompassing a variety of methods such as Scrum, Extreme Programming (XP) and Lean Development (Dybå & Dinsøyr, 2008). These different methods are unified by their fundamental principles as outlined in the Agile manifesto, emphasising individuals and interactions over processes and tools, working software over comprehensive documentation, customer collaboration over contract negotiation, and responding to change over following a plan (Beck et al., 2001). Due to the diverse range of Agile methods, various definitions have emerged. This thesis adopts the slightly older but still relevant definition (Dinsøyr et al., 2018) of Agile as an approach to "rapidly or inherently create change, proactively or reactively embrace change, and learn from change while contributing to perceived customer value" (Conboy, 2009, p. 340). With its emphasis on change and (customer-centric) value creation, the Agile methodology presents significant opportunities for industries beyond software development (Dybå & Dingsøyr, 2008). In current times, the Agile way of working has expanded into various industries offering advantages such as improved interpersonal communication (Marder et al., 2021), enhanced performance (Junker et al., 2022) and increased innovative behaviour (Koch et al., 2023)

Within this methodology, individuals are assigned to self-managing, multi-disciplinary teams (Malik & Orr, 2022). These self-managing teams are defined as "a group of individuals with diverse skills and knowledge with the collective autonomy and responsibility to plan, manage and execute tasks interdependently to attain a common goal" (Magpili & Pazos, 2018, p. 3). Operating under a shared leadership model, these teams lack a formal leader, instead, all team members take on parts of the leadership role (Magpili & Pazos, 2018). These teams generally work with short development cycles allowing the team to continuously integrate customers' feedback, thereby increasing the team's flexibility to respond to changes in customer demands (Koch et al., 2023). Within Scrum, these development cycles are known as sprints, consisting of three key meetings: sprint planning, refinement, and retrospective meetings (Dinsøyr et al., 2018; Hossain et al., 2009). Sprint planning initiates the sprint, with the purpose of defining its goals, selecting tasks, prioritising them and planning their execution (Ozcelikkan et al., 2022). On the other hand, the retrospective meeting marks the end of the sprint, with the primary objective of improving team processes (Przybyłeket al., 2022). During retrospective meetings, team members reflect on their successes, failures and areas for improvement and link this to people and practices (Przybyłeket al., 2022). Hence, while sprint planning discusses mostly task- and process-related issues, the retrospective holds greater potential for relations-related discussions and evaluating process-related problems (Lehtinen et al., 2017). Furthermore, the person responsible for bridging the gap between the customer and the team is called the Product Owner, helping the team to prioritise the right tasks (Dinsøyr et al., 2018). Koch and Schermuly (2021) summarised these characteristics of Agile teams into three overarching dimensions: team autonomy, team equality (i.e., absence of a formal leader), and iterative delivery of project increments, creating a combination of team characteristics that is unique to Agile teams.

2.2 Team Conflict

While Agile teams might differ from traditional teams in various aspects, conflicts remain unavoidable as conflicts are an inherent part of team dynamics (Todorova et al., 2022). Team conflict can be defined as a situation where "an individual or group perceives differences and opposition between itself and another individual or group" (De Dreu & Gelfand, 2008, p. 6). The body of research on team conflict is substantial, with a predominant focus on Jehn's typology (1995, 1997) of task- and relationship conflict, as well as the subsequently added process conflict (e.g., De Dreu & Weingart, 2003; De Wit et al., 2012; Greer & Dannals, 2017; O'Neill et al., 2013). However, the type of conflict represents only one facet of the broader conflict phenomenon (Todorova et al., 2022). Conflict type, alongside conflict intensity, forms the *conflict state*, defined as the "shared perceptions among members of the team about the intensity of disagreement over either tasks or relationships" (DeChurch et al., 2013, p. 560). How the team perceives the conflict (i.e., conflict states) impacts how the team handles the conflict, leading to the emergence of *conflict processes*, characterised as "members' interactions aimed at working through task and interpersonal disagreements" (DeChurch et al., 2013, p. 560). Similarly, how the team manages the conflict may impact its perception of the conflict situation, thus intertwining the two concepts of conflict states and conflict processes (DeChurch et al., 2013). A visual overview of the different components of conflict can be found in Figure 1. In the following sections, the conflict states and processes are discussed in detail.

2.2.1 Conflict states

The concept of conflict states consists of two fundamental components: firstly, the classification of conflict into types and, secondly, the degree of conflict expression intensity (i.e., the intensity of the disagreement). The three primary conflict types are task conflict, relationship conflict and process conflict (Jehn, 1995, 1997). Task conflict refers to disagreements about the content of the task (Jehn, 1995, 1997). Relationship conflict, on the other hand, focuses on interpersonal incompatibilities (Jehn, 1995, 1997) and process conflict relates to matters such as defining and dividing responsibilities, delegating and scheduling tasks, and deciding on the methods by which these tasks are executed (Jehn, 1997). The impact of these different types of conflict on performance is contested (Greer & Dannals, 2017). Job performance can be defined as "the total expected value to the organisation of the discrete behavioural episodes that an individual carries out over a standard period of time" (Motowidlo, 2003, p. 39). While some studies found task conflict to be positively related to performance (Jehn, 1995; DeChurch et al., 2013), others found strong negative correlations between the two (De Dreu & Weingart, 2003). In contrast, the impact of relationship conflict on performance showed more stable results, current research generally agrees that relationship conflicts may harm individual and team performance (e.g., De Dreu & Weingart, 2003; De Wit et al., 2012; Greer & Dannals, 2017; Jehn, 1995). Similarly, process conflict was found to have a negative impact on team performance (De Wit et al., 2012, O'Neill et al., 2013), except during the early stages of team formation (Greer & Dannals, 2017). Furthermore, in 2012, a novel type of conflict was introduced, namely status conflict, defined as "disputes over people's relative status position in their group's social hierarchy" (Bendersky & Hayes, 2012, p. 323), which may also negatively affect performance outcomes (Greer & Dannals, 2017). While conflicts may exhibit elements of various types, a pure status conflict is distinct from a pure relationship conflict (Bendersky & Hayes, 2012). Status conflicts can arise independently of interpersonal relationship quality and inherently involve attempts to bolster one's status or lower another's status, whereas pure relationship conflicts are motivated by this negative interpersonal relationship dynamic stemming from different values, preferences or priorities (Bendersky & Hayes, 2012).

Considering the partly conflicting results regarding the impact of conflict types on individual and team-level outcomes, a sole focus on conflict type seems to be insufficient (Bendersky et al., 2014). Therefore, research has broadened its scope to include how conflicts are expressed, providing further insights into the relationship between conflict and job performance (Weingart et al., 2015). Using the framework proposed by Weingart et al. (2015), conflict expression intensity can be defined along two dimensions: oppositional directness and oppositional intensity. Oppositional directness is the degree to which a team

member explicitly voices their opposition, both in terms of the ambiguity of the expression and to whom it is expressed (Weingart et al., 2015). In conflicts that score high on oppositional directness, a team member clearly communicates their disagreement to the opposing party, whereas in conflicts exhibiting lower scores on this dimension, a team member might indirectly communicate their disagreement by using for example critical questions directed at a third party instead of the 'opponent'. Furthermore, oppositional intensity is the "degree of strength, force or energy" (Weingart et al., 2015, p. 240) that the team member uses to convey their opposition, defined in terms of entrenchment in position and subversiveness of actions. Conflicts marked by higher oppositional intensity, such as fights, are characterised by defending one's own position (high entrenchment) and active attempts to undermine or attack the position of the opposing party (high subversiveness) (Todorova et al., 2022), often eliciting stronger emotional responses (Weingart et al., 2015). Conversely, low oppositional intensity conflicts, such as debates, exhibit lower levels of entrenchment and subversiveness, with team members being more open to considering the other party's perspective (Todorova et al., 2022). Thus, oppositional directness and oppositional intensity collectively determine the conflict expression intensity, with higher levels of intensity increasing the likelihood of team members experiencing negative emotions (Todorova et al., 2022).

Therefore, when analysing conflicts and their impact on job performance, it is important to consider both the conflict type as well as the expressed intensity of the conflict (Weingart et al., 2015), not solely at the team level, but arguably even more importantly, also at the individual level focusing on the behaviours team members display and how they interact which each other, leading to more fine-grained and in-depth insights into the relationship of conflict and job performance (Greer & Dannals, 2017). Moreover, these behaviours and interactions also play a critical role in how the team navigates and handles the conflict, constituting what is known as the conflict process, another important aspect in explaining the impact of conflict situations on job performance (DeChurch et al., 2013; Todorova et al., 2022).

2.2.2 Conflict processes

Conflict process, defined as "members' interactions aimed at working through task and interpersonal disagreements" (DeChurch et al., 2013, p. 560), can have a significant impact on overall performance (Behfar et al., 2008). As previous research indicated task conflicts show the most potential to benefit team outcomes (De Wit et al., 2012), but it hinges upon the effective management of the conflict (Greer & Dannals, 2017). Indeed, the meta-analysis of DeChurch and her colleagues (2013) revealed that how teams handle their conflicts and the behaviours they display explain additional variances in team outcomes, surpassing those explained by conflict types alone. This analysis distinguished between individualistic (concern for self) and collectivistic (concern for others) approaches to conflict management (DeChurch et al., 2013; Todorova et al., 2022). Notably, collectivistic behaviours were found to exhibit a positive relationship with team performance, while individualistic behaviours were more likely to have a detrimental effect on team performance (DeChurch et al., 2013). According to the dual concern model, conflict management encompasses five distinct strategies varying in their concern for self and concern for others, namely problem-solving, compromising, yielding, forcing, and avoiding. Problem-solving in conflict management involves integrating the concerns of others, whereas the compromising strategy focuses on finding the middle ground. The yielding approach occurs when team members accept the concerns of others while relinquishing their own. The opposite version of yielding is forcing, where team members impose their will on others. Lastly, the avoiding strategy ignores the conflict altogether, disregarding both their own concerns as well as the concerns of others.

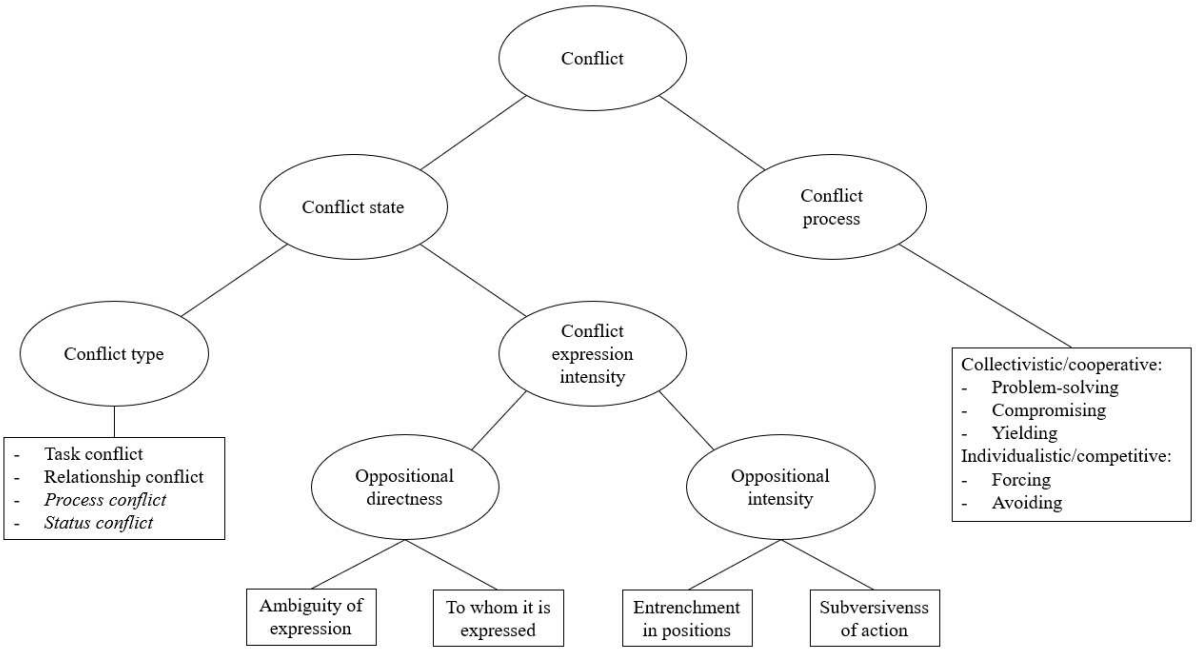
This dual concern model also captures the distinction between competitive and cooperative conflict management strategies (Krueger et al., 2022; Todorova et al., 2022). In competitive approaches, team members treat their goals as mutually exclusive (Maltarich et al., 2018). In contrast, in cooperative approaches, team members view their goals as congruent with those of their fellow team members (Maltarich et al., 2018). The problem-solving, compromising and yielding strategies align with the collectivistic/cooperative dimension, while the forcing and avoiding approaches belong to the

individualistic/competitive dimension (Krueger et al., 2022). Research by Maltarich et al. (2018) indicated that relationship conflict positively correlates with the adoption of competitive conflict management strategies and negatively correlates with cooperative approaches. Moreover, in situations marked by high-intensity relationship conflicts, forcing emerged as the predominant strategy for conflict management, whereas, in situations with low-intensity task conflicts, team members were more inclined to adopt collectivistic conflict management approaches (Todorova et al., 2022).

Hence, both conflict type and expression intensity may influence the conflict management approach adopted by the team members, and the chosen conflict management strategy may shape the team members' perceptions of these conflict types and intensities, thereby intricately intertwining all three concepts, which together influence the impact of conflict on performance (DeChurch et al., 2013; Todorova et al. 2022).

Figure 1

Components of Conflict Based on the Literature



2.3 Cultural Diversity

The team members' perception of conflict types and intensities, as well as their strategies for conflict resolution, may be impacted by the team's cultural diversity (Krueger et al., 2022). While cultural diversity has been linked to beneficial team outcomes, such as enhanced creativity and knowledge sharing (Mannix & Naele, 2005; Stahl et al., 2010), it was also found to increase the number of conflicts within a team (Triana et al., 2021) and reduce the team members' performance (Stahl et al., 2010; Triana et al., 2021). In the meta-analysis conducted by Stahl and his colleagues (2010), culturally heterogeneous teams were found to experience a higher frequency of task conflicts stemming from variations in values, norms, behaviours and communication styles. Additionally, the team members' different values and experiences lead to different views on how to execute the task, resulting in a higher number of process conflicts (Jehn et al., 2008). Not only is there an increase in the number of conflicts, but conflicts in multicultural teams also manifest differently (Behfar et al., 2006). Culture is "a lens through which people interpret conflict and orient themselves when conflict occurs" (Brett et al., 2014, p. 136). Therefore, culture can affect the verbal and non-verbal behaviours through which conflicts are

expressed, how these behaviours are perceived, what emotions they evoke, how the consequences of the conflict are interpreted, and lastly, how the conflict should be handled (Krueger et al., 2022).

The cultural composition of a team may shape the experience and perception of particular conflict expressions, in terms of their oppositional directness and intensity, affecting how team members choose to express opposition and how others interpret and react to this opposition (Weingart et al., 2015). Diverse cultures perceive and respond differently to expressions with high versus low intensity (Weingart et al., 2015). These cultures behave differently in their reliance on verbal versus non-verbal cues. In low-context cultures, such as the Netherlands, the US and Germany, team members typically favour unambiguous and direct expressions characterised by words and actions, whereas in high-context cultures, such as Japan, Italy and India, opposition is indirectly expressed and the team members' interpretation relies heavily on non-verbal cues and the context of the conflict (Krueger et al., 2022). When team members share the same cultural context, whether high- or low-context, they tend to hold the same expectations towards conflicts, fostering a shared understanding of norms on how to behave and react to each other, thus not limiting the information flow (Weingart et al., 2015). However, when team members have different cultural backgrounds, in terms of high- and low-context cultures, their expectations may diverge, leading to varying perceptions and interpretations of each other's behaviours (Weingart et al., 2015), potentially altering the original intended message (Krueger et al., 2022). This challenge is particularly pronounced for team members from low-context cultures, who may struggle to decipher and interpret the embedded messages from team members from high-context cultures (Weingart et al., 2015). On the other hand, research indicates that team members from high-context cultures are more likely to perceive expressions with high levels of oppositional directness as rude or impolite and consequently tend to have negative emotional responses to them, in comparison to their counterparts from low-context cultures (Krueger et al., 2022). Thus, a team member's cultural background, particularly in terms of high- versus low-context cultures, plays a crucial role in how the conflict is expressed and acts as a filter through which conflict behaviours of others are interpreted and reacted to.

Similarly, a team member's cultural background affects their sensemaking of the conflict management approaches employed by others (Krueger et al., 2022) as well as their individual openness towards cooperation (Aslani et al., 2016). Central to this process is the differentiation between dignity, face and honour cultures (Aslani et al., 2016). Their distinction is derived from individuals' perceptions of self-worth, the value assigned to status and power, and the recognition and acknowledgement of these attributes in others (Leung & Cohen, 2011). In dignity cultures, prevalent in most Western European and North American cultures, characterised by intrinsic derivation of one's self-worth and a relatively egalitarian and dynamic power distribution, individuals tend to employ a logical and direct approach to conflict management, along with a greater emphasis on positive rather than negative emotions (Krueger et al., 2022). Conversely, in face cultures, as present in many East and Southeast Asian cultures, self-worth is derived in the context of social interactions and power is distributed as a fixed hierarchy (Leung & Cohen, 2011). Here, an indirect collectivistic approach to conflict management is more common, in which negative emotions are subdued and humility and duty are highly valued (Krueger et al., 2022). Lastly, honour cultures, often found in Latin American and Middle Eastern cultures, base their self-worth on how they are viewed by others, and power is distributed hierarchically, but often contested (Leung & Cohen, 2011). In these cultures, individuals emphasise the concerns of others, but only of those who are in their inner circle (Krueger et al., 2022). Based on their perceived threat to their reputation, individuals from honour cultures either resort to competitive/individualistic approaches (high perceived threat) or cooperative/collectivistic approaches (low perceived threat) (Aslani et al., 2016).

Thus, cultural diversity may not only increase the number of conflicts (Triana et al., 2021) and shapes how the conflict manifests but may also hold significance in determining how teams handle their conflicts (Krueger et al., 2022), which in turn influences the impact of these conflicts on performance (Triana et al., 2021). Nevertheless, despite their heightened potential for conflicts, culturally diverse

teams can serve as valuable assets to the organisation as long as they are managed properly (Schmidt et al., 2023).

2.4 Verbal Behaviour

Analysing the interaction among team members and their individual behaviours may help to understand conflict manifestation within teams (Greer & Dannals, 2017), particularly in multicultural teams where conflict might present itself differently (Krueger et al., 2022). Since Agile teams operate under a shared leadership model, all team members can eventually exhibit leadership behaviours (Mapili & Pazos, 2018). Previous research indicated that the behaviours displayed by a leader may trickle down to their team members (Van Dun & Wilderom, 2021), who in turn adopt similar behaviours. These leadership behaviours can reduce the number of conflicts and their intensity (Ballesteros-Rodriguez et al., 2020). Furthermore, leadership behaviours during situations of conflict have a significant effect on the team's performance (Rzepka & Bojar, 2020). Thus, gaining a comprehensive understanding of these leadership behaviours becomes of critical importance.

Over the years, numerous taxonomies of leadership behaviour have been established. While these theories show differences and similarities, at the origin of many of these leadership taxonomies is the dichotomy between the two meta-categories of task-oriented and relations-oriented leadership behaviour (Behrendt et al., 2017), displayed in Table 1. Task-oriented leadership behaviour's primary objective is to enhance the efficiency and quality of the task accomplishment (Yukl et al., 2019) and it entails behaviours such as informing, providing structure and direction, and correcting (Hoogeboom et al., 2021). In contrast, relations-oriented behaviour encompasses behaviours such as providing support, showing appreciation, and empowering with the main objective of maintaining "commitment, confidence and cooperation" (Yukl et al., 2019, p. 775) and has been found to explain most of the variance in individual job performance (Borgmann et al., 2016). A crucial distinction between task- and relations-oriented leadership behaviours lies in the focus of the behaviour: when a team member displays relations-oriented leadership behaviour, they emphasise the bond between themselves and the team, whereas, in situations with task-oriented leadership behaviour, the team member solely focuses on the elements of the task (Hoogeboom et al., 2021). Moreover, recent research distinguishes *positive* from *negative* relations-oriented leadership behaviour (Meinecke et al., 2017). While behaviours like providing support, showing appreciation and empowering are all examples of positive relations-oriented behaviour, negative relations-oriented behaviour includes behaviours such as belittling, showing disinterest and interrupting (Meinecke et al., 2017). Similar behaviours have been linked to toxic, dysfunctional leadership, which had a significant detrimental effect on job performance (Lee et al., 2024). A third behavioural dimension, change-oriented leadership behaviour, has later on been introduced, with the primary objective to "identify and implement desirable changes in tasks, outputs or work procedures" (Yukl et al., 2019, p. 775). This behavioural category encompasses all behaviours associated with change, which is pivotal within Agile teams (Serrador & Pinto, 2015), such as visioning, inspiring and encouraging innovation (Van Dun et al., 2017; Yukl et al., 2019). Incorporating this third dimension enables a comprehensive examination of the verbal behaviours exhibited by Agile team members focusing on task efficiency, human relations and change.

Task-oriented leadership behaviours typically focus on task accomplishment (Yukl, 2012) by presenting factual information, dividing tasks and providing structure (i.e., by governing/delegating, informing with facts, and shaping the discussion, represented by codes 4, 5 and 6 in Table 3). Moreover, task-oriented leadership behaviours may involve monitoring task progress and indicating negative performance to enhance task quality and efficiency (Yukl, 2012) (i.e., verifying, governing/correcting, and giving negative feedback, codes 2, 3, and 1 in Table 3). Lastly, task-oriented leadership behaviours also include team members expressing agreement or disagreement with specific statements (codes 8 and 9 in Table 3) or sharing their own opinions (code 7 in Table 3) (Hoogeboom et al., 2021).

Furthermore, positive relations-oriented behaviours, aimed at increasing the quality of relationships within the team (Yukl, 2012), involve team members engaging in behaviours that connect them with

others or the team in general. This included paying attention to others, lightening the mood or boosting the morale, strengthening team cohesion, and building relationships by sharing personal information (i.e., giving positive attention, humour, and sharing personal information, codes 10, 12, and 13 in Table 3). Additionally, positive relations-oriented behaviours also involve behaviours where individuals offer positive feedback such as praise or compliments to their fellow team members, thereby reinforcing relationships within the team (Hoogeboom et al., 2021) (i.e., giving positive feedback, code 11 in Table 3). Notably, instances of humour only belong to positive relations-oriented behaviour if at least two other team members laugh at the joke. If the team member telling the joke is the only one laughing, or if the humour is sarcastic or undermines the other team members' position, this behaviour belongs to the negative relations-oriented behaviour category.

Moreover, change-oriented behaviours promote innovation and facilitate change within the team (Yukl et al., 2019) and include asking for input, stimulating ways of alternative thinking and providing a vision (Van Dun et al., 2017). (i.e., professional challenging and giving direction/long term, codes 14 and 15 in Table 3).

Negative relations-oriented behaviours focus on behaviours where a team member promotes their self-interest or undermines the position of others (defending one's own position, code 17 in Table 3), or when team members exhibit impolite or disrespectful behaviour (showing disinterest and governing/interrupting, codes 16 and 18 in Table 3), thereby potentially damaging interpersonal relations within the team (Briggs et al., 2023). Moreover, as an additional behaviour, as presented in Table 3, listening involves team members actively listening to others, by for example making eye contact, nodding, or paraphrasing. Even though listening is not an active verbal behaviour, it is included in the codebook to allow for continuous coding of every moment in the meeting, ensuring a comprehensive capture of all verbal behaviours using mutually exclusive categories.

Table 1

Overview of the Different Types of Leadership Behaviours

Type	**Primary objective**	**Examples of behaviours**
Task-oriented behaviour	Enhancing efficient and high-quality task accomplishment (Yukl, 2012)	- Clarifying - Planning - Monitoring - Problem-solving
Relations-oriented behaviour	Increasing the quality of human resources and relations by building and maintaining relationships among the team members (Yukl, 2012)	*Positive:* - Supporting - Empowering - Showing appreciation - Developing *Negative:* - Belittling - Showing disinterest - Interrupting
Change-oriented behaviour	Increasing innovation, collective learning and adapting to the external environment (Yukl, 2012)	- Advocating change - Envisioning change - Facilitating collective learning - Encouraging innovation

These distinct categories of verbal leadership behaviours play a pivotal role in the occurrence and progression of conflicts, holding the potential to minimise conflict frequency and reduce the intensity when conflicts arise (Kotlyar & Karakowsky, 2007). Task-oriented leadership behaviours may set examples for team members, thereby diminishing the adverse effects of task conflict (Bai et al., 2016). Additionally, the emphasis on task-oriented leadership can enhance the team member's positive emotions towards their co-workers, reducing the frequency of relationship conflicts (Bono et al., 2007). Furthermore, relations-oriented behaviour may improve the relationships within the team, preventing both task and relationship conflict (Van Woerkom & Van Engen, 2009). Indeed, in previous research conducted by Ballesteros-Rodriguez et al. (2020) both task- and relations-oriented leadership behaviour had a significant negative impact on the occurrence of task conflict and relationship conflict, thereby enhancing the level of team performance (Zhang et al., 2011).

However, current research has predominantly relied on survey-based data to assess both categories of leadership behaviours (Hoogeboom et al., 2021). This is unlikely to fully capture the actual observable behaviours as these surveys are often based on retrospective self-assessments (Hoogeboom & Wilderom, 2015; Zhao et al., 2019). Therefore, to assess task-, relations- and change-oriented leadership behaviour and their role in conflict development and management, ultimately impacting the team member's job performance, it is of great importance to observe the actual behaviour team members display during situations of conflict.

2.5 Physiological Arousal

These verbal behaviours do not solely occur through cognitive processes; rather, they are a result of the combination of cognitive and underlying subconscious processes and emotions, underscoring the need to employ biological measures to assess the within-person physiological processes accompanying verbal behaviours during situations of conflict (Christopoulos et al., 2019). Due to their diverse functions, these different verbal leadership behaviours might be associated with distinct physiological processes (Hoogeboom et al., 2021). This becomes increasingly interesting since cultural diversity within teams may influence the type of verbal behaviours exhibited by the team members (Krueger et al., 2022; Weingart et al., 2015), which at the same time, may occur beneath the level of consciousness (Stahl et al., 2010). Therefore, it is crucial to look beyond observable behaviours and extend the horizon towards the team members' within-person physiological processes. Despite various calls for an integrative approach, combining behavioural components with physiological processes to study conflict remains uncommon in organisational research (Arvey & Zhang, 2015; Christopoulos et al., 2019). Hence, simultaneously analysing synchronised verbal behaviours and fluctuations in team members' physiological arousal levels might generate valuable insights into the fine-grained dynamics in conflict situations and the differences between mono- and multi-cultural teams.

2.5.1 Measuring physiological arousal

There are multiple methods available to measure within-person physiological processes, such as electroencephalography (EEG), functional magnetic resonance imaging (fMRI) for brain scanning, and electrodermal activity (EDA) (Bergstrom et al., 2014). Electrodermal activity (EDA) measurement devices can measure skin conductance responses (SCRs) (Boucsein, 2012). Skin conductance reflects variations in the activity of the eccrine sweat glands in response to sweat secretion from the skin (Hoogeboom et al., 2021). While these eccrine sweat glands are present in the entire body, their highest concentration can be found in the palms and soles (Hoogeboom et al., 2021). Skin conductance consists of both tonic levels, representing a team member's baseline level of skin conductance, and phasic levels, measuring variations or responses to certain stimuli, i.e., the increases or decreases in electrodermal activity (Boucsein, 2012). These various skin conductance responses are linked to the sympathetic branch of the autonomic nervous system (SNS) (Figner & Murphy, 2011). Prior research indicated that the brain regions connected with this system are involved in SCRs triggered by emotional stimuli rather than non-emotional stimuli, such as taking a deep breath (Figner & Murphy, 2011). These SCRs reflect what are known as secondary emotions, meaning that the emotions experienced do not have to be

conscious to produce a physiological reaction (Hoogeboom et al., 2021). Additionally, the SNS significantly influences an individual's emotional processes and motivation by generating neuronal and hormonal stress responses, such as the fight-or-flight response (Boucsein, 2012; Figner & Murphy, 2011; Hoogeboom et al. 2021). Hence, SCRs are widely employed as biomarkers of general and emotional arousal, associated with changes in emotional states (Christopoulos et al., 2019; Boucsein et al, 2012).

2.5.2 Verbal behaviours, conflicts and physiological arousal

Within-person physiological arousal is intertwined with environmental stimuli, like social interactions and the behaviours of others (Christopoulos et al., 2019). Consequently, the dynamics of the social environment are reflected in the skin conductance responses (SCRs), where distinct verbal behaviours might be accompanied by varying levels of within-person arousal. Notably, previous research revealed that certain emotional words (e.g., joy, happiness, fear) paired with possessive pronouns (e.g., her happiness) or negatives (e.g., no joy) evoked distinct physiological responses (Weis & Herbert, 2017). Moreover, Hoogeboom et al. (2021) discovered a correlation between a leader's physiological arousal, their relations-oriented leadership behaviour and their level of effectiveness. Effective leaders demonstrated higher levels of physiological arousal when they engaged in positive and negative relations-oriented behaviour in comparison to their ineffective counterparts, whereas no significant differences in arousal levels were observed between effective and ineffective leaders during situations with task-oriented behaviour (Hoogeboom et al., 2021). This provides further indication that different types of verbal leadership behaviour displayed during conflict situations may elicit varying physiological responses, especially given the (sub)conscious differences between culturally homogenous and heterogeneous teams.

Additionally, during these situations of conflict, team members experience several emotions, such as anxiety, frustration and anger (Todorova et al., 2022). Relationship conflicts, for instance, often invoke strong emotions (Chen & Ayoko, 2012; Todorova et al., 2022) and may even result in adverse physiological effects, such as increases in somatic complaints (Meier et al., 2013). Furthermore, conflicts within culturally diverse teams are likely to trigger additional emotional reactions, due to varying interpretations and cultural inclinations (Krueger et al., 2022). Similarly, high-intensity conflicts tend to prompt more emotional responses, in particular in instances of high-intensity relationship conflicts (Weingart et al, 2015). High-intensity relationship conflicts are likely to involve personal attacks and clashes of different personalities, potentially triggering feelings of threat and defensive positions. When individuals experience perceived psychological threats, their blood pressure increases, indicating higher levels of physiological arousal (Scheepers & Ellemers, 2005). Additionally, conflict expressions characterised by high subversiveness and entrenchment, may result in team members feeling irritated and angry (Weingart et al., 2015). Anger, among other negative stimuli, has been linked to elevated SCRs and higher physiological arousal (Berkowitz, 1990; Vrana & Gross, 2004). However, not only negative emotions have been linked to increased levels of physiological arousal; positive emotions, such as happiness, are also connected to enhanced physiological arousal (Heaphy & Dutton 2008). Thus, particular conflict situations, such as high-intensity conflicts, status conflicts or conflicts involving negative relations-oriented behaviours, as well as instances where team members attempt to defuse or resolve conflict with positive relations-oriented behaviours, may generate heightened physiological responses compared to less emotional conflict situations.

Indeed, skin conductance responses (SCRs) are more likely to occur during situations where individuals are presented with positive or negative stimuli than in situations with neutral stimuli (Bradley et al, 2008). Task-oriented behaviours, when compared to relations-oriented behaviours, can be considered as more neutral stimuli (Hoogeboom et al., 2021). In the research by Weis and Herbert (2017), positive emotional words (e.g., my joy) resulted in increased physiological responses (including heart rate and SCRs), whereas neutral word pairs (e.g., no book) did not show any heightened physiological reactions. Similarly, task-oriented behaviours accompanying words like 'budget', 'planning' or 'action', might not generate distinct variations in SCRs, compared to more emotional statements. However, it is crucial to

note that while SCRs can offer valuable insights into the intensity or valence of physiological arousal, they do not specify the associated emotion (Boucsein, 2012). Previous research discovered that the most profound learning occurred during situations marked by high physiological arousal (Waller et al., 2017). Thus, it was the intensity of the physiological response, rather than the emotional valence (whether the emotion is positive or negative) that fostered stronger learning processes.

2.5.3 Physiological arousal and performance

According to the premise of healthy variability, fluctuations in the intensity of the physiological reactions must match the variations in social cues (including behaviours) present in the environment (Navarro & Rueff-Lopes, 2015). Consequently, a lack of variability in physiological arousal may then act as a signal of the team member's lack of sensitivity to the behaviours of others (Hoogeboom et al., 2021; Navarro & Rueff-Lopes, 2015). Insensitivity to social cues could lead to misinterpretations of the behaviours of others, potentially resulting in inappropriate responses that hinder the smooth conflict progression (Weingart et al., 2015), thereby increasing the detrimental impact of the conflict on job performance. The premise of healthy variability thus suggests that team members with healthy variability, i.e., fluctuations in physiological arousal levels that align with the variety of behaviours in their environment, are more likely to be high-performing than team members with so-called 'unhealthy' variability. Hence, differences in fluctuations of team members' physiological arousal levels may indicate differences in their performance levels.

In light of the above, teams with different cultural compositions experience diverse conflict situations with distinct characteristics, which may elicit various verbal behaviours, emotions and physiological responses, thereby potentially influencing the team member's job performance. Previous research, mostly focusing on team-level conflict types and their effects on team performance, established that conflicts can impact team performance and may manifest differently in multicultural teams (Mannix & Neale, 2005; Stahl et al., 2010; Triana et al., 2021). In contrast, this thesis adopts a different approach. Firstly, it focuses on conflict manifestation and progression, considering not only conflict type but also conflict intensity, in terms of oppositional directness and oppositional intensity, along with conflict management strategies. Secondly, it centres on conflict manifestation and progression *at the individual level,* examining individual-level verbal behaviours and co-occurring within-person physiological processes during conflict situations and their impact on individual job performance. Thirdly, by investigating both culturally homogenous and heterogenous teams, a broader spectrum of verbal behaviours, emotions, social interactions, and potentially different physiological responses can be explored, providing further insights into how conflicts manifest, particularly in culturally diverse teams. All in all, examining and comparing these conflict processes offers an in-depth and fine-grained analysis of how conflicts may manifest and impact job performance on the individual level.

3. Methodology

3.1 Research Design

This study employed a mixed-method research design, consisting of both qualitative and quantitative measures (Creswell et al., 2003), to study the conflict processes at the individual level. By integrating both quantitative and qualitative data, this study strived to gain a more complete and enriched understanding of the phenomenon under study while enhancing the validity of the findings through the convergence of qualitative and quantitative strategies (Lund, 2012). The study included three sources of data: (1) video-coded verbal behaviours during regular team meetings, (2) electrodermal activity (EDA) measures capturing the physiological arousal of participants through their skin conductance responses (SCRs), and (3) expert performance ratings, where multiple experts each rated the observed performance of all individual participants. By triangulating these distinct data sources, the research aimed to enhance the validity and credibility of its findings (Cohen et al., 2018; Noble & Heale, 2019).

3.2 Data Collection

The data of this study were collected at a large financial service organisation in the Netherlands as part of an extensive research project conducted by the Organisational Behaviour, Change Management and Consultancy Group (OBCC) at the University of Twente. The dataset comprised transcribed video recordings of three meetings – the sprint planning, the refinement meeting, and the retrospective meeting – involving multiple Agile teams during a single sprint cycle. The recorded meetings were regularly held staff meetings, which would have taken place regardless of the research project, allowing to capture the real-life workplace interactions between participants. Directly after each meeting, participants were asked to fill in a survey to confirm the representativeness of the recorded meeting compared to their regular meetings, among other questions. Thus, each team, with a few exceptions, was recorded three times, encompassing all three meetings of a full sprint cycle. Furthermore, the data utilised in this study were collected and analysed at the individual level. The video-recorded meetings were deductively coded using a verbal codebook developed by the OBCC Group at the University of Twente, which has been validated through prior research (Hoogeboom & Wilderom, 2015; Hoogeboom et al., 2021; Van Dun et al., 2017; Van Dun & Wilderom, 2021). This codebook consists of multiple mutually exclusive categories designed to classify verbal behaviour. Two individuals independently coded all meetings to mitigate potential observer bias. This resulted in two distinct event logs, which were then compared to produce one final event log, thereby minimising the risk of potential bias during the coding process.

3.3 Sample

The organisation at which the data were collected has worked with Agile for over seven years. They implemented the Agile methodologies across various divisions and branches, creating small multidisciplinary teams consisting of specialists with backgrounds in, for instance, marketing, IT development and product development, all dedicated to enhancing the customer journey. The sample size of this study encompassed 58 individuals belonging to 7 teams. On average, the team members were 36.7 years old (SD = 8.74) and had worked with Agile for 4 years (SD = 3.13). Furthermore, they had been part of the team for at least 1 month and on average for 1.1 years (SD = 1.11). The average team size was 8.3 members (SD = 1.25). Moreover, out of all participants, 43 (74.1%) were male, 12 (20.7%) were female, and 3 participants did not disclose their gender information. The majority of participants were of Dutch nationality, compromising 34 individuals (58.6%), followed by 7 individuals (12.1%) of Indian descent and 17 individuals (29.3%) with a different cultural background including Armenia, Belgium, Brazil, Germany, Hungary, Indonesia, Peru, Poland, Russia, Spain, Slovakia and Thailand.

To categorise the teams according to their cultural composition, culturally diverse teams were defined as those teams composed of individuals with different country- or ethnicity-based cultural backgrounds, each carrying distinct values and attitudes associated with their culture (Stahl et al., 2010; Wang et al., 2019). If a team included team members from three or more different cultural backgrounds, as indicated by their self-reported nationality in the survey, the team was classified as culturally heterogeneous. Applying this criterion, four teams were classified as multicultural teams, consisting of a total of 30

individuals, whereas three teams were categorised as monocultural teams, compromising a total of 28 individuals. Henceforth, the monocultural teams will be referred to as Teams 1-3, and the multicultural teams as Teams A-D. All individuals were analysed at two moments in time, corresponding to the two different meetings (sprint planning and retrospective), resulting in a total of 14 analysed meetings. The sprint planning and retrospective meetings were selected due to their different purposes, potentially influencing the topics team members discuss, the verbal behaviours they utilise and the potential for conflicts during these meetings.

3.4 Measures

3.4.1 Conflicts

Several behaviours, as outlined in the verbal codebook (see Table 3), were selected as potential triggers for conflict situations. These six behaviours were: *'Giving negative feedback'*, *'Disagreeing'*, *'Defending one's own position'*, *'Governing/correcting'*, *'Governing/Interrupting'* and '*Showing disinterest'*. All these behaviours involve a certain degree of criticism, thereby posing a potential threat to an individual's face and sociality rights (Spencer-Oatey, 2008; Zhao et al., 2020), consequently increasing the likelihood of starting conflicts (Zhao et al., 2020). The potential conflict situations were reviewed starting one minute prior to and ending one minute after each instance of an identified trigger behaviour to fully capture the context of the conflict situation.

Furthermore, to classify the conflicts according to their types, the intensity of conflict expression (measured in terms of oppositional directness and oppositional intensity), and approaches to conflict management, the definitions provided by Jehn (1995, 1997), Weingart et al. (2015) and DeChurch et al. (2013) were used (see Section 2.2 for the specific definitions). When team members solely discussed disagreements on task-related matters, the conflict was coded as a task conflict. On the other hand, if team members started to use emotional statements, focus on workstyles and personalities, or attack other team members, the conflict was identified as a relationship conflict. In the case that interpersonal disagreements involved proving one's superior position to other team members, it was coded as a status conflict. Lastly, conflicts that arose from disagreements regarding when and how to execute tasks (i.e., task logistics) were categorised as process conflicts. Nevertheless, these conflict types are not mutually exclusive, conflicts can evolve into another type and different types can co-occur (Bendersky & Hayes, 2012). To operationalise the definitions, Table 2 provides examples of different statements that may signal a particular conflict type and its intensity level.

Table 2

Examples of Verbal Behaviours Signalling Conflicts

Conflict characteristic	Example
Conflict type	
Task conflict (Jehn, 1995,1997)	- "The website header should be blue, not red" - "No, the profit is 1 million, not 10 million"
Relationship conflict (Jehn, 1995, 1997)	- "You did that completely wrong!" - "I do not like your attitude" - "You are always late"
Process conflict (Jehn, 1997)	- "I disagree, person A should perform the task" - "We need to finish this today, next week is too late"
Status conflict (Bendersky & Hayes, 2012)	- "You do not understand this, I have done this many times before" - "I have worked here for over 10 years and this is not how we should solve this problem"
Conflict expression intensity	

Low oppositional directness (Weingart et al., 2015)	- "Could we see how others typically make these financial decisions" - "Maybe we should try this differently"
High oppositional directness (Weingart et al., 2015)	- "I completely disagree with your financial decisions." - "I do not like this idea, we need to change it!"
Low oppositional intensity (Weingart et al., 2015)	- "Maybe we can discuss this problem later in a private meeting" - Passive-aggressive behaviour
High oppositional intensity (Weingart et al., 2015)	- "I did not make that mistake; you were the one that did it wrong!" - "I always note the changes; Person A is the one who forgets it."

3.4.2 Physiological arousal

Physiological arousal was measured using electrodermal activity (EDA) measurement capturing participants' skin conductance responses (SCRs). SCRs reflect the short-term variations in phasic electrodermal activity (Boucsein, 2012). The SCRs were assessed during regular staff meetings using the BIOPAC MP160 system. Measuring EDA on the hairless palm of the hand or sole of the foot increases the reliability and validity of the results (Boucsein et al., 2012). Hence, before each meeting started, two electrodes were placed on each participant's non-dominant hand palm to measure their EDA, thereby minimising the obtrusiveness of the devices (Boucsein, 2012). The BIOPAC MP160 system utilised EDA transmitters to send the skin conductance data to its accompanying software 'AcqKnowledge', where the EDA data was stored. Each participant was assigned a unique number for identification during the video observations and verbal behaviour coding, which, in turn, was linked to their measurement device, ensuring accurate matching of skin conductance data to the right individual. Following the data collection, event-related EDA analysis was performed to create the dataset. The event-related EDA analyses identified stimulus events and SCRs exceeding a specific threshold (measured in microsiemens: µS) within a designated timeframe. Historically, thresholds were often set at 0.05µS, however, recent technological advancements led to the adoption of lower thresholds in current literature, ranging from 0.03µS to 0.01µS (Braithwaite et al., 2013). Therefore, in this study, the threshold was set to 0.02µS. Furthermore, to match the SCRs with the video recordings and verbal behaviours, a latency window of 1 to 4 seconds was utilised, aligning with established practices in the literature (Boucsein, 2012). The event-related EDA analysis resulted in a dataset consisting of SCRs along with their corresponding amplitudes, which is the change in tonic EDA levels, measured from the moment an SCR surpasses the threshold until the SCR reaches its peak (Braithwaite et al., 2013).

3.4.3 Verbal behaviour

All teams were video recorded at two moments in time – during the sprint planning and retrospective meeting – to assess the verbal interactions among the team members. Subsequently, all verbal behaviours in the video-recorded meetings were systematically coded into 19 mutually exclusive categories using the 'Observer XT' software (Noldus et al., 2000) and based on the codebook, as illustrated in Table 3, developed by the OBCC group at the University of Twente, which has been validated through previous research (Hoogeboom & Wilderom, 2015; Hoogeboom et al., 2021; Van Dun et al., 2017; Van Dun & Wilderom, 2021).

Table 3

Definitions and Examples of Verbal Behaviour Categories

	Coded behaviour	Type	Definition	Examples
1	Giving negative feedback	Task	Negative evaluation in relation to the team, a team member, an action or a project	- "I do not think that this is a fitting solution" - "Next time, we need to do this differently" - "I am not happy with your work, but let's try to fix it" - "I am not happy with your work, it is totally wrong" - "You are always late"
2	Verifying	Task	Asking team members for clarification and confirmation about (the progress on) their tasks or responsibilities;	- "Did you already complete…" - "We chose this option, right?" - "What is the status on…"
3	Governing/Correcting	Task	Imposing disciplinary action; Presenting team members with a 'fait accompli'	- "No, that is wrong (= disagreeing), you need to do this…" - "You're looking at your individual tasks, instead of the team tasks"
4	Governing/Delegating	Task	Dividing or discussing tasks or roles (without enforcing them); Determining the current direction	- "Jake, I would like you to…" - "Andrew, can you work on …"
5	Informing with facts	Task	Giving factual information	- "Our scores increased by 10%" - "The organisation has a new program"
6	Shaping the discussion	Task	Structuring or shaping the conversation; Changing topics	- "Let's continue with…" - "Let's take a break at 2 pm" - "To summarise…" - "The next point on the agenda…"
7	Giving direction/Own opinion	Task	Giving one's own opinion on goal, priorities, action or direction	- "I think we should… " - "I personally think that it is more important to …"
8	Agreeing	Task	Agreeing with something; Consenting to something	- "Yes, you're right" - "I agree" - "Correct"
9	Disagreeing	Task	Contradicting team members	- "I don't think that's correct" - "I disagree with you"
10	Giving positive attention	Positive relations	Paying attention to others by showing friendly behaviour or sympathy; Showing personal interest or empathy toward another team member	- Welcoming guests - "Would you like some coffee" - "How are you doing now? Are you feeling better?" - "I understand... Do you need help?" - "Enjoy your weekend"
11	Giving positive feedback	Positive relations	Positively evaluating and rewarding the behaviour and actions of team members	- "You did very well" - "The result looks really good" - "Good idea" - "The other divisions were very satisfied with our results"
12	Humour	Positive relations	Making jokes or funny statements	- Joke or funny statement - "Haha, that was funny!"

13	Sharing personal information	Positive relations	Sharing personal information; Talking about matters unrelated to work	- "I had a lovely weekend" - "Our new-born had trouble sleeping last night"
14	Professional challenging	Change	Asking for opinions or ideas; Stimulating alternative ways of thinking; Stimulating teamwork	- "What do you think about…?" - "What should we do?" - "How can we change…?" - "We can solve this problem together"
15	Giving direction/Long term	Change	Talking about vision or long-term goals; Talking about important values and beliefs	- "Our vision/goal is…" - "We need to develop our knowledge of…"
16	Showing disinterest	Negative relations	Not taking any action (when expected); Not focusing (attentively) on the meeting	- Not listening actively - Whispering with one another whilst someone else is speaking
17	Defending one's own position	Negative relations	Emphasizing self-importance; Putting self-interest first; Putting someone else at fault	- "It is not my fault" - "You don't understand, I know how..." - "We're doing it my way"
18	Governing/Interrupting	Negative relations	Interfering or disturbing when other team members are talking	- Interrupting other team member's sentences
19	Listening		Active listening	- Nodding - Paraphrasing - Brief meaningful responses

All meetings were independently coded by two different students, with a background in either Business Administration, Communication or Psychology. All students received extensive training on how to use the codebook and the video-coding software 'Observer XT' to ensure a reliable and rigorous coding process. After two students independently coded the entire meeting, the results were compared, and differences were noted. These discrepancies were then discussed to create one final event log with 100% agreement.

3.4.4 Job performance

Individual job performance was measured using expert performance ratings, developed by the OBCC group at the University of Twente, following the scale established by Gibson et al. (2009). Five to eight experts independently rated each individual's observed behaviour in relation to the organisation's objectives throughout the two meetings across four dimensions: 1) '*This employee is consistently high performing'*, 2) *'This employee is effective',* 3) *'This employee makes few mistakes'* and 4) '*This employee does high quality work'*. All items were measured on a ten-point Likert scale, ranging from *'totally disagree'* to *'totally agree'* demonstrating high internal consistency ($\alpha = .943$).

3.4.5 Representativeness of behaviours

After each recorded meeting, participants were asked about the representativeness of the meeting compared to their usual meetings ($M = 4.6$, $SD = 1.7$), the resemblance of their team members' behaviour to their typical behaviour in non-recorded meetings ($M = 5.3$, $SD = 1.3$), and the similarity of their own behaviour to their usual behaviour ($M = 5.3$, $SD = 1.3$). All items were assessed based on a seven-point Likert scale, ranging from *'Very different'* to *'Not at all different'*.

3.5 Data Analysis

3.5.1 Multimodal analysis

To analyse the qualitative data resulting from the video-recorded meetings and their transcripts, this thesis utilised an innovative methodological approach of multimodal analysis, where multiple modalities (i.e., verbal and non-verbal behaviour) are combined. Multimodal analysis is "the process of interpreting and making sense of qualitative data in projects that mix verbal and nonverbal forms of information" (Dicks, 2019, p. 6), and is often used in linguistics and discourse analysis (Van Leeuwen, 2020). This method of analysis allowed for a comprehensive understanding of patterns in the meetings, analysing

multiple modes of communication, such as gestures, voice, gaze and body language, thereby integrating what was being said with how it was said to make sense of the whole.

Firstly, all verbal behaviours exhibited during the video-recorded sprint planning and retrospective meetings were coded using the verbal behaviour codebook, as illustrated in Table 3, facilitated by the 'Observer XT' software (Noldus et al., 2000).

Secondly, since not all instances of identified trigger behaviours (as specified in Section 3.4.1) necessarily lead to conflict (i.e., not all situations in which trigger behaviours are displayed are perceived as conflicts), all occurrences of trigger behaviours were reviewed to determine whether they resulted in conflicts based on the researcher's inductive interpretation, drawing on the video recordings and corresponding transcripts. Each potential conflict situation was reviewed within a one-minute window before and after the event to capture the context of the conflict. After reviewing all situations, the moments of conflict were compared to an existing list of identified conflicts, resulting in an intercoder reliability of 86.36%.

Thirdly, after identifying the actual moments of conflict, a combination of inductive and deductive approaches was employed for analysis. First, verbal behaviours and skin conductance responses were matched using the AcqKnowledge software. During the analysis, patterns within the data were noted and interpreted inductively based on verbal behaviours and physiological arousal levels during the three phases of conflict: initiation, escalation and resolution. Subsequently, all conflict situations were categorised deductively drawing upon the established classifications present in the literature on conflict types (see Section 2.2.1), conflict expression intensity (see Section 2.2.1), and conflict resolution strategies (see Section 2.2.2).

3.5.2 Frequency and comparative analyses

Furthermore, these differences in conflict situations and their accompanying verbal behaviours and arousal levels were then compared through frequency and comparative analysis, contrasting team members from mono- and multicultural teams. Comparative analysis explores differences and similarities across multiple cases, assessing values of variables, relational patterns between variables, and occurrences or patterns of events, to holistically unravel the underlying processes that contribute to the observed disparities and similarities (Pickvance, 2001). Frequency analysis was performed to determine the number of conflicts within each sub-category, followed by comparative analysis, including the comparative independent samples t-test and its non-parametric equivalent the Mann-Whitney U Two-Independent-Samples test, to pinpoint the differences and similarities in conflict situations, exhibited verbal behaviours and levels of physiological arousal between team members of culturally homogenous and heterogeneous teams.

Additionally, a further comparative analysis was conducted to compare conflict engagement, manifestations of specific (patterns of) verbal behaviours and skin conductance responses between high- and low-performing individuals based on the expert performance ratings. This analysis aimed to discern whether different approaches and attitudes towards conflict might lead to distinct levels of job performance.

3.5.3 Episode analysis

Lastly, an episode analysis was performed on a selection of conflicts to gain deeper insights into the manifestation of verbal behaviours and different conflict situations between mono- and multicultural teams, as well as high- and low-performing individuals. An episode is defined as "a significant moment in the team's ongoing activity […] as occasions of heavy engagement, salient interaction dynamics and strategically important decisions" (Jarrett & Liu, 2016, p. 370). The analysis focused on video observations, transcripts and coded verbal behaviours to fully capture all relevant aspects of the conflict dynamics.

4. Results

In the following section, the results of the data analysis are presented. This study aimed to examine the verbal behaviours and physiological responses during conflict situations within Agile teams, focusing on differences between monocultural and multicultural teams during sprint planning and retrospective meetings, and their impact on team members' job performance. To offer a more comprehensive overview, it was decided to combine quantitative and qualitative findings and report them per topic. This approach clarifies how the quantitative results are reflected in actual verbal interactions and conflict dynamics, enriching quantitative findings with qualitative insights (Lund, 2012).

The results section starts with the findings from the conflict identification process, followed by a comparison of conflict situations between mono- and multicultural teams during sprint planning and retrospective meetings. It then compares verbal behaviours and physiological responses in mono- and multicultural teams and during sprint planning and retrospectives. Finally, it concludes with a comparison of verbal behaviours and skin conductance responses between high- and low-performing team members.

4.1 Conflict Identification

Throughout all meetings, a total of 1,424 trigger behaviours were observed. As shown in Table 4, 'Governing/Interrupting' was the most prominent one, accounting for 53.93% of all trigger behaviours. This was followed by 'Showing disinterest' and 'Defending one's own position', accounting for 17.35% and 11.94% of all trigger behaviours, respectively. Furthermore, team members in mono- and multicultural teams showed distinct frequencies of trigger behaviours. Team members in culturally homogenous teams showed a higher prevalence of 'Giving negative feedback' (5.24%), 'Defending one's own position' (12.8%), and 'Showing disinterest' (23.78%), whereas team members in culturally diverse teams displayed higher frequencies of 'Disagreeing' (11.59%), 'Governing/Correcting' (3.97%), and 'Governing/Interrupting' (60.60%). Out of six trigger behaviours, only 'Showing disinterest' showed a significant difference between mono- and multicultural team members (23.78% versus 8.61%) (p = 0.01), with team members in monocultural teams displaying disinterest in the conversation significantly more often compared to team members in culturally diverse teams.

Table 4

Observed Trigger Behaviours among Team Members in Mono- and Multicultural Teams

Behaviour	**Monocultural team members**		**Multicultural team members**		**Total**	
	N	**%**	***N***	**%**	***N***	**%**
Giving negative feedback	43	5.24	27	4.47	70	4.92
Disagreeing	54	6.59	70	11.59	124	8.71
Defending one's own position	105	12.8	65	10.76	170	11.94
Governing/Correcting	21	2.56	24	3.97	45	3.16
Governing/Interrupting	402	49.02	366	60.60	768	53.93
Showing disinterest	195	**23.78***	52	**8.61**	247	17.35
Sum	820	100%	604	100%	1424	100%

Note. Values represent the results from the observed sprint planning (N = 7) and retrospectives (N = 7). Values in bold represent significant results. * $p < 0.05$ (two-tailed, Mann-Whitney U Two-Independent-Samples test). N = absolute frequency, % = relative frequency.

After reviewing all instances of trigger behaviours, 44 moments were identified as conflicts, each consisting of one or multiple trigger behaviours. Of these, 20 conflicts were triggered by the verbal behaviour of "Disagreeing", 10 by 'Negative feedback', 8 by 'Governing/Interrupting', and 5 by 'Governing/Correcting'. Interestingly, the verbal behaviour 'Defending one's own position' triggered only one conflict, which was also one of the only two relationship conflicts. 'Showing disinterest', on the other hand, did not trigger any conflicts. While one behaviour was identified as the trigger for each

conflict, the trigger behaviours were present throughout the conflicts, both in the initiation, escalation and resolution phases, accounting for 22.08% of verbal behaviours during conflict situations.

Since 1424 trigger behaviours resulted in a total of 44 conflicts, the observed presence of a trigger behaviour did not automatically lead to conflict. Furthermore, the task-oriented behaviour 'Governing/Correcting' triggered a relationship conflict, whereas the negative relations-oriented behaviour 'Governing/Interrupting' triggered several task conflicts. Thus, it can be noted that the verbal behavioural categories of task-oriented, positive and negative relations-oriented, and change-oriented behaviours were not necessarily linked to the conflict types of task, relationship, process and status conflict.

4.2 Conflict Composition

The 44 observed conflicts were categorised based on their conflict composition characteristics, including conflict type, conflict expression intensity, and conflict management approach. During the analysis, an additional code of 'conflict resolution status' was introduced to distinguish between resolved and unresolved conflicts. Incorporating this code allowed for more nuances in the conflict categorisation process. Team members occasionally employed conflict management approaches unsuccessfully. By adding this code, not only the type of conflict management approach but also its effectiveness was captured, determining whether the conflict was resolved or not. This code consisted of three categories: 'explicit resolution', for resolved conflicts where all involved team members expressed clear agreement with the proposed solution to the conflict; 'implicit resolution', for conflicts that were resolved without explicit agreement through for example unspoken understanding or natural alignment over time; and 'unresolved', for conflicts that remained unresolved and were likely to continue in the future.

All conflict composition characteristics were mutually exclusive, except for conflict type. Conflicts could evolve from one type to another or exhibit attributes of multiple types, as was the case in the retrospective meeting of monocultural Team 2, where a conflict showed elements of both a task and status conflict, and in the retrospective meeting of multicultural team C where a task conflict evolved into a relationship conflict.

Table 5

Conflict Composition Characteristics of Mono- and Multicultural Teams

Conflict characteristic	**Monocultural teams**		**Multicultural teams**		**Total**	
	N	**%**	***N***	**%**	***N***	**%**
Conflict type						
Task	18	81.82	17	77.27	35	79.55
Relationship	0	0.00	2	9.09	2	4.55
Process	4	18.18	5	22.73	9	20.45
Status	1	4.55	0	0.00	1	2.27
Oppositional directness						
High	4	18.18	7	31.82	11	25.00
Medium	11	50.00	12	54.55	23	52.27
Low	7	31.82	3	13.64	10	22.73
Oppositional intensity						
High	2	9.09	3	13.64	5	11.36
Medium	6	27.27	7	31.82	13	29.55
Low	14	63.64	12	54.55	26	59.09
Conflict resolution						
Explicit resolution	17	77.27	14	63.64	31	70.45
Implicit resolution	3	13.64	5	22.73	8	18.18
Unresolved	2	9.09	3	13.64	5	11.36
Management approach						
Problem-solving	3	13.64	8	36.36	11	25.00

Compromising	6	**27.27***	1	**4.55**	7	15.91
Yielding	8	36.36	4	18.18	14	31.82
Forcing	3	13.64	7	31.82	8	18.18
Avoiding	2	9.09	2	9.09	4	9.09
Total number of conflicts	22	100%	22	100%	44	100%

Note. Values in bold represent significant results. Underlined values represent notable distinctions. * $p < 0.05$ (two-tailed, Mann-Whitney U Two-Independent-Samples test). N = absolute frequency, % = relative frequency.

As shown in Table 5, task conflicts were the most prevalent, occurring in 79.55% of all conflict situations, followed by process conflicts at 20.45%. Relationship and status conflicts were less common, occurring in 4.55% and 2.27% of the conflict situations, respectively. Most conflicts exhibited a medium level of oppositional directness (52.27%), indicating more direct statements voiced to the group, or more indirect statements voiced to the opposing party, and a low level of oppositional intensity (59.09%), i.e., team members did not try to undermine the positions of others or defend their own. The combination of high oppositional directness and high oppositional intensity, resulting in high conflict expression intensity, was rare, occurring in only 4 out of 44 conflict situations. In these conflicts, statements were direct and focused on the opponent, while simultaneously actively trying to defend the speaker's position and weaken the other's position. Interestingly, the only status conflict and one of the two relationship conflicts both had high oppositional directness and intensity. So, while these conflict types were rare, they did have a strong impact on the team dynamics due to their high conflict expression intensity. The following excerpt, resulting from the episode analysis of a relationship conflict with high expression intensity in multicultural Team C, illustrates this dynamic:

Team member A: *"I talked about this in the stand-up but you missed it. That was stand up […] and you were not there."*

Team member B: *"pff ok."*

Team member A: *"So if you don't know about this was blocked. You are not in this."*

Team member A: *"Ok, so now we are going to also be very nitty gritty."*

In contrast, a statement from a task conflict with a low expression intensity in multicultural Team B showed a different approach:

Team member: *"Can I ask you why do you think we need to leave completely the valuable time?"*

While in the first example, the statements were marked by direct, confrontational language and focused on 'you' versus 'me', in the second example, the disagreement was voiced as an open question and more focused on the collective 'we'. This combination of medium oppositional directness and low oppositional intensity was the most common, occurring in 15 out of 44 conflict situations and exclusively in task and process conflicts.

Moreover, most conflicts were explicitly resolved (70.45%) or implicitly resolved (18.18%), with only a small portion remaining unresolved (11.36%). Of the 5 unresolved conflicts, 3 conflicts exhibited a high level of conflict expression intensity. Additionally, yielding (31.82%), where individuals give in to the opponent's demands, and problem-solving (25.00%), where team members integrate the concerns of others, were the most common conflict management approaches. These were followed by forcing (18.18%), where one individual imposes their will on others, compromising (15.91%), where team members seek a middle ground, and lastly avoiding (9.09%), where team members ignore the conflict altogether. Interestingly, in unresolved conflicts, team members opted for either a forcing or avoiding approach to conflict management, both individualistic conflict management approaches. Similarly, in conflict with high expression intensity, team members constantly chose an individualistic conflict management approach of either forcing or avoiding. Consequently, high-expression intensity conflicts

often remained unresolved. Overall, the collectivistic conflict management approaches (problem-solving, compromising and yielding) were more prevalent, accounting for 72.73% of all conflict situations, whereas individualistic approaches were only used in 27.27% of the conflict situations.

4.2.1 Comparing mono- and multicultural teams

Mono- and multicultural teams experienced an equal number of conflicts, 22 each, as shown in Table 5. However, their conflict composition characteristics varied. In culturally homogenous teams, 81.82% of conflicts were task-related, compared to 77.27% in culturally heterogenous teams. Conversely, process conflicts were more common within culturally diverse teams (22.73%) than in monocultural teams (18.18%). Notably, relationship conflicts occurred exclusively in multicultural teams, specifically Team C, whereas monocultural Team 2 experienced the only status conflict.

Moreover, the overall level of oppositional directness was higher in multicultural teams than in monocultural teams. For instance, as illustrated by the results from the episode analysis, during a task conflict with low oppositional directness within monocultural Team 1, team members expressed their disagreement indirectly with phrases such as: *"So maybe we should have made […]"* and *"That's the wrong focus perhaps"*. In contrast, during a task conflict with medium oppositional directness in multicultural Team A, the exchanges were more direct:

Team member A: *"Yes, you have to make all the calls…"*

Team member B [interrupting]: *"I am not going to make any calls."*

Team members in monocultural teams expressed their conflicts with more medium and lower-level oppositional directness (50.00% and 31.82%, respectively), while team members in multicultural teams showed more medium and higher-level oppositional directness (54.55% and 31.82%, respectively). Differences in oppositional intensity were less pronounced. Team members in monocultural teams leaned slightly towards medium-low oppositional intensity, with low oppositional intensity conflicts accounting for 63.63%, medium oppositional intensity for 27.27% and high-oppositional intensity conflicts for 9.09%. Conversely, team members in multicultural teams exhibited slightly more medium-oppositional intensity conflicts, with low oppositional intensity accounting for 54.55%, medium oppositional intensity for 31.82% and high oppositional intensity conflicts for 13.64%. Additionally, 3 out of 4 rare high-expression intensity conflicts, with both high oppositional directness as well as high oppositional, occurred in multicultural teams.

Furthermore, both mono- and multicultural teams resolved most conflicts (90.91% and 86.37%, respectively). Team members in monocultural teams had a slightly stronger preference for explicit resolution over implicit resolution (77.27% and 13.64%, respectively), in comparison to team members in culturally diverse teams who resolved 63.64% of their conflicts explicitly and 22.73% implicitly. Explicit resolution within monocultural teams often happened fast and efficiently, characterised by a simple *"Yes?"* or *"Clear?"* to which most team members responded with some sort of verbal or non-verbal approval, e.g., a simple nod.

Moreover, team members in mono- and multicultural teams held different preferences towards conflict management approaches. Monocultural team members opted more often for yielding (36.36%) and compromising (27.27%) compared to multicultural team members. Among the various conflict composition characteristics, the conflict management approaches of compromising showed a significant difference between mono- and multicultural team members (27.27% versus 4.55%) (p = 0.047), indicating that monocultural team members chose this approach significantly more often than their counterparts in multicultural teams. This approach is exemplified in the episode analysis of a process conflict with medium expression intensity in monocultural Team 2 where team members were discussing the duration of a presentation, first proposing a five-minute presentation, followed by several counteroffers, and ultimately settling on a one-to-five-minute duration, thereby finding a middle ground between the team member's opinions and concerns and reaching a solution on which everyone agreed.

Conversely, problem-solving (36.36%) and forcing (31.82%) were more frequently used among team members in culturally heterogenous teams, compared to team members in culturally homogenous teams. In general, team members in monocultural teams more often employed collectivistic conflict management approaches compared to multicultural team members (77.27% versus 59.09%), while team members in culturally diverse teams more frequently used individualistic approaches (40.91% versus 22.73%). Thus, while team members in mono- and multicultural teams experienced the same number of conflicts, conflicts characterised by high oppositional directness and individualistic management approaches were more frequently encountered in culturally diverse teams, whereas conflicts characterised by lower levels of expression intensity and collectivistic management approaches, specifically compromising, were more often experienced in monocultural teams.

4.2.2 Comparing sprint planning and retrospectives

All teams were reviewed at two moments in time: the sprint planning and the retrospective meeting. In the sprint planning, most conflicts revolved around the allocation of story points and the selection of stories for the sprint. This often resulted in factual conflicts, as illustrated by the following excerpt from the episode analysis of a process conflict with low expression intensity during the sprint planning in monocultural Team 3:

Team member A: *"I think it's already the second sprint in which it has 1 point."*

Team member B: *"It is 10 points instead of 1."*

Team member C: *"Yes, there are quite a lot of tasks for just one point"*

Team member D: *"But not 10."*

Team member A: *"So now we use it for the third time?"*

Team member D: *"You could just make it 5."*

This continued until the team finally settled on 1 point. In contrast, conflicts within the retrospective meeting often involved discussions about the achievement of KPIs, results, personal feedback, encountered problems, and potential solutions. Within these conflicts, opinions played a larger role than facts and a potential environment for higher-intensity conflicts was created. These differences are reflected in the quantitative comparative analysis, as shown in Table 6. Firstly, 16 conflicts occurred during the sprint planning compared to 28 conflicts during the retrospective meeting. Out of the 16 conflicts in the sprint planning, 12 were task conflicts (75%) and 4 were process conflicts (25%). In contrast, within the retrospective meeting, 23 conflicts (82.14%) were task-related and 5 were process-related (17.86%). Remarkably, all relationship and status conflicts were exclusively experienced during the retrospective meeting.

Table 6

Conflict Composition Characteristics of Sprint Planning and Retrospective Meetings

Conflict Characteristic	**Sprint planning (*N* = 7)**		**Retrospective (*N* = 7)**	
	N	**%**	***N***	**%**
Conflict type				
Task	12	75.00	23	82.14
Relationship	0	0.00	2	7.14
Process	4	25.00	5	17.86
Status	0	0.00	1	3.57
Oppositional directness				
High	3	18.75	8	28.57
Medium	7	43.75	16	57.14
Low	6	37.50	4	14.29

Oppositional intensity				
High	0	0.00	5	17.86
Medium	7	43.75	6	21.43
Low	9	56.25	17	60.71
Conflict resolution				
Explicit resolution	11	68.75	20	71.43
Implicit resolution	4	25.00	4	14.29
Unresolved	1	6.25	4	14.29
Management approach				
Problem-solving	3	18.75	8	28.57
Compromising	3	18.75	4	14.29
Yielding	5	31.25	9	32.14
Forcing	4	25.00	4	14.29
Avoiding	1	6.25	3	10.71
Total number of conflicts	16	100%	28	100%

Note. Underlined values represent notable distinctions. * $p < 0.05$ (two-tailed, Mann-Whitney U Two-Independent-Samples test). *N* = absolute frequency, % = relative frequency.

Furthermore, conflicts in the sprint planning exhibited lower oppositional directness than those in the retrospective meeting. Within the sprint planning, 37.50% of conflicts had a low oppositional directness, 43.75% had a medium oppositional directness, and only 18.75% had a high level of oppositional directness. Conversely, 14.29% of conflicts in the retrospective meeting had a low level of oppositional directness, 57.14% had a medium level, and 28.57% had a high level. Moreover, most conflicts in both settings had low oppositional intensity (56.25% in sprint planning and 60.71% in retrospectives). However, conflicts with the combination of high oppositional directness and high oppositional intensity exclusively occurred in the retrospective meeting.

Additionally, retrospective meetings had a higher rate of unresolved conflicts than sprint planning (14.29% versus 6.25%). Explicit over implicit resolution was more common among team members in the retrospective meeting (71.43% and 14.29%, respectively) than in sprint planning (68.75% and 25.00%, respectively). Lastly, despite the significant difference in overall conflict composition characteristics between the two types of meetings, the conflict management approaches did not show large variations. Yielding was the most popular conflict management approach in both settings, accounting for 31.25% in sprint planning and 32.14% in retrospective meetings. This was followed by forcing (25.00%), problem-solving (18.75%) and compromising (18.75%) in the sprint planning, and by problem-solving (28.57%), compromising (14.29%) and forcing (14.29%) in the retrospective meetings. Avoiding was the least popular conflict management approach among team members in both meetings, accounting for 6.25% in the sprint planning and 10.71% in the retrospectives. While none of the specific conflict composition characteristics showed significant differences between sprint planning and retrospectives, the comparative analysis did reveal significant differences in overall conflict composition characteristics between these two types of meetings ($p = 0.001$). This indicates that the overall conflict situations experienced by the team members during sprint planning and retrospectives were significantly different, with retrospective meetings tending to involve more detrimental conflicts affecting job performance, such as relationship conflicts and high-expression intensity conflicts.

4.3 Verbal Behaviour

Firstly, different conflict situations were accompanied by distinct patterns of verbal behaviours. In high-to-medium level expression intensity conflicts, i.e., conflicts with a combination of high and medium levels of oppositional directness and intensity, the behaviours of ‘Defending one’s own position’, ‘Negative feedback’ and ‘Disagreeing’ occurred more often and lasted longer than in low-to-medium level expression intensity conflicts, i.e., conflicts with a combination of low and medium levels of

oppositional directness and intensity. In one of the analysed episodes, one team member in monocultural Team 2 during a task conflict with medium oppositional directness and high oppositional intensity said:

Team member: *"Well, this confused me because I explicitly asked if these are the retour numbers [= defending one's own position]. And then you meant the coloured ones and I meant the other ones. I think that is really way too low [= negative feedback] […]. That completely put me on the wrong track [= defending one's own position]."*

Another team member in multicultural Team C during a task conflict that evolved into a relationship conflict with high oppositional directness and intensity said in an annoyed tone with a slightly raised voice:

Team member: *"I get that [= defending one's own position], but that is not really the point here [= disagreeing], right? […] I've the feeling that we are starting the blame game of why certain things have not been done [= negative feedback]. Basically, Person A is saying that I should have provided […] while we discussed that […] you were going to do that with External Person [= defending one's own position]."*

On the other hand, the behavioural patterns in low-to-medium expression intensity conflicts showed more task-oriented behaviours, complemented by positive relations-oriented and change-oriented behaviours. For instance, during an analysed episode of a task conflict with low oppositional directness and intensity in monocultural Team A, one team member said:

Team member: *"But I think it has to be done also in this sprint, of course [= Giving direction/own opinion]"*

To which another team member responded:

Team member: *"Eh, maybe or maybe not [= disagreeing], because if there's a lot of work and we are really involved then we can also say, okay, yeah, we cannot fix it at this point or we have to re-prioritise. It depends on how we feel. [= Giving direction/own opinion] We should think about it, right? [= professional challenging]".*

These examples from the episode analysis illustrate the differences in verbal behaviours and how they reflect the various levels of oppositional directness and intensity.

4.3.1 Comparing mono- and multicultural teams

Secondly, the comparative analysis of the four verbal behaviour types, as shown in Table 7, revealed two significant differences. Team members in culturally diverse teams engaged in significantly more task-oriented behaviours than team members in monocultural teams (47.96% versus 36.38%) (p = 0.026), indicating a preference for task-oriented behaviours for team members in culturally diverse teams. Individuals in monocultural teams, on the other hand, displayed (marginally) significantly more positive relations-oriented behaviours when compared to team members in multicultural teams (5.19% versus 1.95%) (p = 0.072), meaning that team members in monocultural more often used positive relations-oriented behaviours during conflicts than their multicultural counterparts. Team members in monocultural teams also exhibited more negative relations-oriented behaviours, accounting for 17.11% of all verbal behaviours, compared to 12.02% among individuals in multicultural teams. Overall, individuals in monocultural teams were observed to show more relations-oriented behaviour compared to those from multicultural teams (22.3% versus 13.97%). Among the individual behaviours, two specific verbal behaviours contributed significantly to this difference. Firstly, individuals in monocultural teams showed significantly more 'Humour' compared to those from multicultural teams (4.09% versus 0.94%) (p =0.028). This indicates that within monocultural teams, team members more often made jokes, resulting in laughter from their peers, in comparison to team members in culturally diverse teams. Secondly, they were observed to exhibit more 'Showing disinterest' when compared to individuals from culturally diverse teams (4.70% versus 1.67%) (p = 0.047), meaning that individuals

in monocultural teams were more often distracted and not paying attention during conflict situations than those in multicultural teams. 'Showing disinterest' typically involved individuals not paying attention, while looking at their phones or working on their laptops and was mostly exhibited by the same few individuals in certain teams. Conversely, the differences in the adoption of change-oriented behaviour were less pronounced, with individuals in multicultural teams displaying a slightly higher percentage of change-oriented behaviours than those in monocultural teams (1.56% versus 0.95%). Nevertheless, team members in mono- and multicultural teams exhibited distinct verbal behavioural patterns during conflict situations, particularly in their adoption of task- and relations-oriented behaviours.

Table 7

Observed Verbal Behaviours during Conflicts among Team Members in Monocultural and Multicultural Teams

Behaviours	**Standardised frequency in %**	
	Monocultural team members (*N* = 28)	**Multicultural team members (*N* = 30)**
Task-oriented behaviour	**36.38***	**47.96**
Giving negative feedback	0.51	0.95
Verifying	5.43	4.18
Governing/Correcting	0.71	0.48
Governing/Delegating	0.18	0.04
Informing with facts	10.21	9.42
Shaping the discussion	0.74	1.36
Giving direction/own opinion	12.32	18.79
Agreeing	3.93	5.07
Disagreeing	2.33	7.67
Positive relations-oriented behaviour	**5.19†**	**1.95**
Giving positive attention	0.53	0.96
Giving positive feedback	0.24	0.03
Humour	**4.09***	**0.94**
Sharing personal information	0.32	0.03
Change-oriented behaviour	0.95	1.56
Professional challenging	0.95	0.92
Giving direction/long term	0.00	0.64
Negative relations-oriented behaviour	17.11	12.02
Showing disinterest	**4.70***	**1.67**
Defending one's own position	1.90	1.43
Governing/Interrupting	10.50	8.93
Listening	40.38	36.50
Total	100.00%	100.00%

Note. The percentages represent the mean relative frequency of each behaviour displayed by team members during the sprint planning and retrospective meetings. Values in bold represent significant results. † $p < 0.10$ (two-tailed, based on a Mann-Whitney U Two-Independent-Samples test). * $p < 0.05$ (two-tailed, based on a Mann-Whitney U Two-Independent-Samples test).

Moreover, the most common behaviours among team members in monocultural teams were 1) "Listening' (40.38%), 2) 'Giving direction/own opinion' (12.32%), 3) 'Governing/Interrupting' (10.50%), and 4) 'Informing with facts' (10.21%), accounting for 73.42% of the observed behaviours. Other behaviours were observed much less frequently, collectively accounting for 26.58%. Notably, 'Giving direction/long term' did not occur during conflicts in monocultural teams, but was observed in multicultural teams, comprising 0.64% of verbal behaviours. In a similar fashion to the monocultural

teams, the most common verbal behaviours of team members in multicultural teams were 1) 'Listening' (36.50%), 2) 'Giving direction/own opinion' (18.79%), 3) 'Informing with facts' (9.42%)', and 4) 'Governing/Interrupting' (8.93%). Despite the similarities in most frequent behaviours, individuals in culturally heterogenous teams showed higher frequencies of 'Disagreeing' (7.67%) and 'Agreeing' (5.07%) compared to those in culturally homogenous teams. The remaining 13 behaviours were all observed during conflicts in multicultural teams, although less frequently, totalling 13.62%, compared to 86.38% from the six most frequent behaviours.

4.3.2 Comparing sprint planning and retrospectives

As shown in Table 8, team members in the sprint planning and retrospective meetings were observed to show distinct verbal behaviours. In sprint planning meetings, individuals primarily displayed task-oriented behaviour (46.27%), followed by listening (40.21%), negative relations-oriented behaviour (9.31%), positive relations-oriented behaviour (3.10%), and lastly change-oriented behaviour (1.11%). Individuals within the retrospective meeting followed this similar pattern, with task-oriented behaviour accounting for 40.19% of the observed verbal behaviours, followed by listening (36.95%), negative relations-oriented behaviour (17.80%), positive relations-oriented behaviour (3.66%), and finally change-oriented behaviour (1.40%).

Table 8

Observed Verbal Behaviours during Conflicts among Team Members in Sprint Planning and Retrospective Meetings

Behaviours	**Standardised frequency in %**	
	Sprint planning (*N* = 53)	**Retrospective (*N* = 46)**
Task-oriented behaviour	46.27	40.19
Giving negative feedback	0.90	0.65
Verifying	5.56	4.19
Governing/Correcting	0.77	0.47
Governing/Delegating	0.00	0.18
Informing with facts	12.11	8.19
Shaping the discussion	0.35	1.58
Giving direction/own opinion	18.30	14.14
Agreeing	**3.43†**	**5.32**
Disagreeing	4.86	5.48
Positive relations-oriented behaviour	3.10	3.66
Giving positive attention	**0.00***	**1.28**
Giving positive feedback	0.18	0.09
Humour	2.56	2.27
Sharing personal information	0.35	0.02
Change-oriented behaviour	1.11	1.40
Professional challenging	1.11	0.81
Giving direction/long term	0.00	0.59
Negative relations-oriented behaviour	**9.31***	**17.80**
Showing disinterest	0.53	4.79
Defending one's own position	0.96	2.12
Governing/Interrupting	7.83	10.89
Listening	40.21	36.95
Total	100.00%	100.00%

Note. The percentages represent the mean relative frequency of each behaviour displayed by team members during the sprint planning and retrospective meetings. Values in bold represent significant results. † $p < 0.10$ (two-tailed, based on a Mann-Whitney U Two-Independent-Samples test). * $p < 0.05$ (two-tailed, based on a Mann-Whitney U Two-Independent-Samples test).

Despite the similar ranking of behaviour categories, the percentages differed. In sprint planning the main observed task-oriented behaviours were 1) 'Giving direction/own opinion' (18.30%), 2) 'Informing with facts' (12.11%) and 3) 'Verifying' (5.56%). In contrast, in the retrospective meeting, the most common task-oriented behaviours were 1) 'Giving direction/own opinion' (14.14%), 2) 'Informing with facts' (8.19%), 3) 'Disagreeing' (5.48%), and 4) 'Agreeing' (5.32%). Notably, the task-oriented behaviour of 'Agreeing' showed a (marginally) significant difference between the sprint planning and retrospective meetings (3.43% versus 5.32%) ($p = 0.055$), indicating that during retrospectives, team members more often expressed agreement with one another than during sprint planning meetings.

Furthermore, individuals in sprint planning and retrospective meetings showed significant differences in the frequencies of negative relations-oriented behaviours ($p = 0.017$), where individuals in retrospectives more frequently adopted negative relations-oriented behaviours (17.80%) compared to individuals in sprint planning (9.31%). All three negative relations-oriented behaviours of 'Showing disinterest', 'Defending one's own position', and 'Governing/Interrupting' were observed more frequently in the retrospective meeting (4.79%, 2.12% and 10.89%, respectively) than during the sprint planning (0.53%, 0.96% and 7.83%, respectively). During an analysed episode of a task- and status-related conflict with high expression intensity in the retrospective meeting of monocultural Team 2, a team member defended his position after a long discussion about KPI performance, saying in an annoyed voice:

Team member: *"But okay, if everyone says so, then I probably made that mistake, I mean if you know it for sure."*

Interestingly, individuals in retrospective meetings also showed more positive relations-oriented behaviours, with a 21.46% observed frequency of relations-oriented behaviour, compared to a 12.41% frequency during sprint planning. As illustrated by the results of the episode analysis, in multicultural team C, where after a long process conflict with many opposing opinions, when team members transitioned into the resolution phase of the conflict situation, team members were quick to provide positive feedback on the proposed solution:

Team member A: *"That is a really good idea to put it on the whiteboard"*

Team member B: "*Yeah, so everyone can see, yes."*

This helped to realign the team, allowing the team to positively move past the conflict. Additionally, 'Giving positive attention', one of the positive relations-oriented behaviours, showed a significant difference between retrospective and sprint planning meetings ($p = 0.016$). This indicates that individuals in retrospective meetings were more inclined to give positive attention to their fellow team members (1.28%) compared to those in sprint planning, where this behaviour was not observed. For instance, during an analysed episode of a relationship conflict in multicultural Team C, where the emotions and frustrations were running high, one team member paid positive personal attention to the frustrations of another team member by asking *"So that's how you felt"*, allowing the other team member to explain and reflect on her emotions, which helped calm the situation and transition from conflict escalation to the resolution phase. Moreover, 'Giving positive attention' was one of the three verbal behaviours, along with 'Governing/Delegating' and 'Giving direction/long term', which were not observed during any of the sprint planning meetings. In contrast, all verbal behaviours were observed during the retrospective meetings, albeit some in low frequencies. All in all, both positive as well as negative relations-oriented behaviours were more common during retrospectives than in sprint planning, suggesting a higher emphasis for individuals on the relational aspects of team dynamics during retrospectives than during sprint planning.

4.4 Skin Conductance Responses

All team members, whether actively engaged in the conflict or merely observing it, showed skin conductance responses (SCRs) that surpassed the threshold during conflict situations. Individuals who

appeared seemingly passive during a conflict exhibited similar numbers of SCRs as those who were actively engaged in the conflict situation. However, the average SCR frequency, i.e., the number of SCRs surpassing the threshold measured in SCRs per minute, during conflicts was not significantly different from the average SCR frequency throughout the entire meeting (4.29 SCRs per minute versus 4.25 SCRs per minute). This indicates that conflict situations were not associated with substantially more individual-level physiological responses than the meeting in general, i.e., individuals were not likely to experience a substantial increase in SCRs during conflict situations. Nevertheless, the highest SCR amplitudes were mostly observed during conflicts with relatively high expression intensity, i.e., conflicts with medium or high oppositional directness and intensity. Similarly, these conflicts also had a higher SCR frequency compared to low-expression intensity conflicts. This indicates that during intense conflict situations, characterised by direct disagreements and personal attacks or the defence of one's position, individuals, on average, experienced more skin conductance responses, as well as the strongest SCRs compared to low- or medium-intensity conflicts.

Table 9

Team Members' Skin Conductance Responses during Conflict Situations

	Monocultural team members	**Multicultural team members**	**Sprint planning**	**Retrospective**
SCR frequency (SCR/min)[a]	4.38	4.09	4.26	4.19
SCR amplitude[b]	0.893	0.988	**0.894***	**0.996**

Note. Values in bold represent significant results. [a] The values represent the mean SCR frequency, measured in SCRs per minute, during conflict situations. [b] The values represent the mean SCR amplitude during conflicts, relative to an individual's average SCR amplitude. * $p < 0.05$ (two-tailed, based on a Mann-Whitney U Two-Independent-Samples test).

Furthermore, as shown in Table 9, individuals in mono- and multicultural teams did not experience a significantly different SCR frequency with an average of 4.38 SCRs per minute during conflicts for individuals in monocultural teams, compared to 4.09 SCRs per minute for individuals in multicultural teams. The SCR amplitude, the difference between the peak height of an SCR minus the height at the moment an SCR surpasses the threshold, had an average of 0.988 in multicultural team members, compared to the average SCR amplitude of 0.893 of individuals in monocultural teams. Interestingly, while team members in culturally diverse teams displayed, on average, fewer SCRs per minute, the average strength of their responses, i.e., the SCR amplitude, was stronger, albeit not significant. Hence, although team members in mono- and multicultural teams encountered different conflict situations, their physiological responses were quite similar, suggesting that individuals in culturally diverse teams did not experience their conflicts differently from their monocultural counterparts.

Moreover, the SCR frequency during conflict situations was not significantly different between the sprint planning and retrospective meetings, with an average of 4.26 SCRs per minute and 4.19 SCRs per minute, respectively, meaning that individuals did not experience significantly more or less skin conductance responses during sprint planning than retrospective meetings. However, individuals in the retrospectives experienced significantly higher average SCR amplitudes during conflicts in comparison to individuals in the sprint planning (0.996 versus 0.894) ($p = 0.037$). Thus, while individuals did not experience significantly more or less SCRs in sprint planning and retrospective meetings, their physiological reactions were significantly stronger in retrospectives than in sprint planning meetings.

4.5 Job Performance

The top 25% highest- and lowest-performing individuals were selected, resulting in two groups of 15 individuals each. The 15 highest-performing individuals had job performance ratings of 7.5 and above, with 8.9 as the highest job performance rating, whereas the 15 low-performing individuals were rated below 6.5, with 5.3 as the minimum rating. The two extremes were selected to create groups with

significantly different performance ratings. Notably, in the high-performance group, 11 out of the 15 individuals (73%) were part of a monocultural team compared to only 3 out of the 15 individuals (20%) in the low-performance group. Thus, monocultural teams had more high-performing individuals whereas culturally diverse teams had more low-performing individuals.

Table 10

Observed Verbal Behaviours during Conflicts among High- and Low-performing Team Members

Behaviours	**Standardised frequency in %**	
	High-performing team members (*N* = 15)	**Low-performing team members (*N* = 15)**
Task-oriented behaviour	37.86	36.27
Giving negative feedback	0.11	1.48
Verifying	3.81	3.70
Governing/Correcting	0.70	0.18
Governing/Delegating	0.25	0.00
Informing with facts	13.04	9.51
Shaping the discussion	1.65	0.29
Giving direction/own opinion	11.03	13.74
Agreeing	4.02	5.90
Disagreeing	3.24	1.46
Positive relations-oriented behaviour	**6.39†**	**1.49**
Giving positive attention	**1.87***	**0.00**
Giving positive feedback	0.22	0.09
Humour	4.30	1.04
Sharing personal information	0.00	0.36
Change-oriented behaviour	0.81	1.75
Professional challenging	0.81	0.89
Giving direction/long term	0.00	0.86
Negative relations-oriented behaviour	**8.87†**	**24.33**
Showing disinterest	0.72	11.11
Defending one's own position	1.03	2.21
Governing/Interrupting	7.12	11.01
Listening	46.08	36.16
Total	100.00%	100.00%

Note. The percentages represent the mean relative frequency of each behaviour displayed by team members during the sprint planning and retrospective meetings. Values in bold represent significant results. Underlined values represent notable distinctions. † $p < 0.10$ (two-tailed, based on a Mann-Whitney U Two-Independent-Samples test). * $p < 0.05$ (two-tailed, based on a Mann-Whitney U Two-Independent-Samples test).

Analysing their behavioural patterns during conflict situations (Table 10), showed distinct differences between the two groups. Both high- and low-performing individuals most frequently exhibited listening (46.08% and 36.16%, respectively) and task-oriented behaviours (37.86% and 36.27%, respectively) with 'Informing with facts' and 'Giving direction/own opinion' as the most prominent task-oriented behaviours. However, 'Informing with facts' was more often used by high-performing individuals compared to low-performing individuals (13.04% versus 9.51%), whereas 'Giving direction/own opinion' was more frequently exhibited by low-performing individuals (13.74% versus 11.03%).

Even though both groups relatively frequently adopted 'Giving direction/own opinion', there was a clear observable distinction in how these opinions were expressed. High-performing individuals, when expressing their opinion, typically used more concise statements with an average duration of 5.95

seconds, conveying useful information for the group and in the case of the exceptional longer statements, the statements were well-substantiated opinions. Conversely, low-performing individuals tended to make longer statements, with an average duration of 9.31 seconds, often as a contrarian response to other team members' opinions or the general consensus, with many unnecessary additional comments, thereby hindering the conflict resolution process. Interestingly, low-performing individuals showed relatively more 'Agreeing' (5.90% versus 4.02%) and less 'Disagreeing' (1.46% versus 3.24%) than high-performing individuals, even though low-performing individuals more often had contrasting opinions. Thus, although listening and task-oriented behaviours were the most common in both groups, there were large differences in the specific task-oriented behaviours high- and low-performing individuals adopted and, more importantly, in how they utilised these behaviours during conflict situations.

Moreover, both groups exhibited negative relations-oriented behaviours as the third most frequent category. However, high-performing individuals were observed to display (marginally) significantly fewer negative relations-oriented behaviours than low-performing individuals (8.87% versus 24.33%) ($p = 0.072$). This suggests that high-performing individuals, on average, engage less often in negative relations-oriented behaviours than their low-performing counterparts. This was particularly evident in the differences between high- and low-performing team members in 'Showing disinterest' (0.72% versus 11.11%) and 'Governing/Interrupting' (7.12% versus 11.01%). Even though the frequencies of 'Governing/Interrupting' were relatively high for both groups, high- and low-performing individuals exhibited this behaviour differently. Low-performing individuals interrupted other team members at appropriate and inappropriate times and tended to continue speaking, thereby dominating the conversation. Conversely, high-performing individuals when interrupting someone, only made short comments or immediately stopped speaking when noticing their interruption, sometimes even apologising for the interruption. High-performing team members also showed interrupting behaviour when team members were engaged in multiple conversations at the same time to bring back the conversation to the team level. Therefore, high-performing team members not only displayed significantly fewer negative relations-oriented behaviours but also showed higher proficiency in utilising these behaviours when necessary.

While high-performing team members' overall adoption of relations-oriented behaviour was lower (15.26% versus 25.82%), their display of positive relations-oriented behaviour was, in fact, (marginally) significantly higher than their low-performing counterparts (6.39% versus 1.49%) ($p = 0.061$), meaning that high-performing individuals more often engaged in positive relations-oriented behaviours when compared to low-performing individuals. This was mostly due to the difference in 'Humour' (4.30% versus 1.04%) and the significant difference in 'Giving positive attention' between high- and low-performing individuals (1.87% versus 0.00%) ($p = 0.035$). Only high-performing individuals displayed 'Giving positive attention', as illustrated during one of the analysed episodes, where one low-performing team member in monocultural Team 2, shyly and reluctantly stated her worries about a certain deadline. A high-performing team member from the same team showed positive attention by acknowledging her concerns, while simultaneously addressing the comment at the team level, without shifting focus entirely to the uncertain team member:

Team member: *"If this is not the right moment, that's completely okay, guys!"*

In this episode, the high-performing individual showed positive attention as well as individual consideration, adapting her comments towards the other team member's verbal and non-verbal behaviour. During conflict situations, 'Giving positive attention' helped to recognise and address the other party's feelings, ensuring their worries were heard and if necessary, acted on. In the observed meetings, high-performing individuals' humour typically consisted of short, witty remarks that picked up on other individuals' previous statements and helped to ease the tension during conflicts. In contrast, low-performing individuals' jokes were more self-centred, drawing attention towards themselves, and while this also resulted in laughter from other team members, it did not particularly help to ease the

tension. Instead, it distracted from the topic at hand and disrupted the process of conflict resolution. In contrast, high-performing team members often played a crucial role in transitioning the conflict from the escalation phase to the resolution phase. Thus, the significantly higher adoption of positive relations-oriented behaviours by high-performing individuals played a crucial role in diffusing tension during conflicts and facilitating the team's progression towards the resolution phase.

Furthermore, change-oriented behaviours posed the second smallest category for low- and high-performing individuals, respectively. Low-performing individuals spend more time on change-oriented behaviours than high-performing individuals (1.75% versus 0.81%). Lastly, high-performing individuals did not exhibit the behaviours of 'Sharing personal information' and 'Giving direction/long term', while low-performing individuals did not show 'Governing/Delegating' and 'Giving positive attention'. Overall, high-performing individuals were more frequently part of monocultural teams, where they engaged more often in positive relations-oriented behaviours, particularly by giving positive attention, and less often in negative-relations-oriented behaviours, and used their verbal behaviours more efficiently compared to low-performing individuals.

Table 11

Skin Conductance Responses of High- and Low-performing Team Members

	High-performing team members	**Low-performing team members**
SCR frequency (SCR/min)[a]	4.45*	2.82
SCR amplitude[b]	0.952*	0.941

Note. [a] The values represent the mean SCR frequency, measured in SCRs per minute, during conflict situations. [b] The values represent the mean SCR amplitude during conflicts, relative to an individual's average SCR amplitude. * $p < 0.05$ (two-tailed, based on a Mann-Whitney U Two-Independent-Samples test).

As shown in Table 11, high-performing individuals exhibited a significantly higher SCR frequency during conflict situations than low-performing team members (4.45 SCRs per minute versus 2.82 SCRs per minute) ($p = 0.019$). This indicates that high-performing individuals experienced significantly more physiological responses during conflict situations, suggesting a higher level of alertness compared to low-performing individuals. Furthermore, high-performing individuals had a significantly higher average SCR amplitude in comparison to their low-performing counterparts (0.952 versus 0.941) ($p = 0.016$). This indicates that high-performing individuals not only had more SCRs but also experienced more responsive physiological reactions, i.e., showed higher SCR peaks, in comparison to low-performing individuals, meaning that they reacted more frequently and more strongly. Interestingly, this difference in SCR amplitude was even more pronounced during retrospectives than during sprint planning, with a 29.39% increase between low- and high-performing individuals in sprint planning, and a 38.33% increase in retrospectives. Thus, the differences in performance ratings between high- and low-performing individuals were also evident in their SCR patterns, particularly during the retrospective meetings.

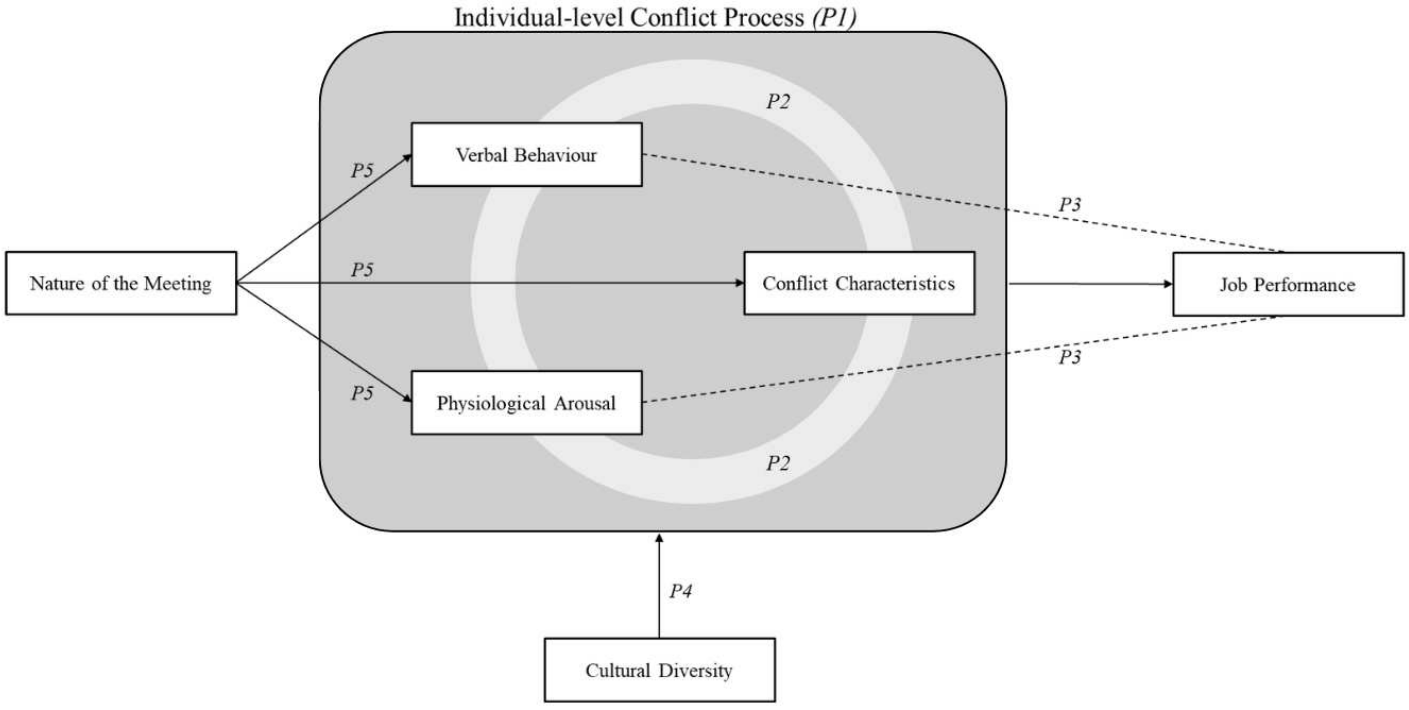
5. Discussion

This mixed-method study explored the co-occurring observed verbal behaviours and within-person physiological arousal processes of mono- and multicultural Agile team members that take place during conflict situations in both sprint planning and retrospective meetings. Through multimodal, frequency, comparative and episode analyses, this study reveals how conflicts unfold differently in mono- and multicultural Agile teams through distinct verbal behaviours and physiological arousal patterns and the different roles of high- and low-performing team members during these situations. Mono- and multicultural team members experienced an equal number of conflicts, yet with varied conflict situations and verbal behaviour patterns. Multicultural team members adopted significantly more task-oriented behaviours, whereas monocultural team members exhibited higher frequencies of positive and negative relations-oriented behaviours, such as humour and showing disinterest. Despite the distinct verbal behavioural patterns, there was no significant difference in the levels of physiological arousal between the two team types. Furthermore, during retrospective meetings team members experienced more and significantly different conflict situations, including all high-expression intensity and relationship conflicts, suggesting that this meeting environment is more conducive to conflicts. Team members also displayed significantly more 'giving positive attention', negative relations-oriented behaviours and higher skin conductance responses (SCR) amplitudes during retrospectives compared to sprint planning. Moreover, high-performing team members exhibited significantly higher frequencies of positive relations-oriented behaviours and significantly fewer negative relations-oriented behaviours. Differences in job performance ratings were also reflected in the levels of physiological arousal where high-performing team members showed significantly higher average SCR frequencies and amplitudes compared to low-performing individuals.

These findings extend the current understanding of team conflict by uncovering how conflicts unfold both within teams and at the individual level. The concept of emotional contagion is proposed to enrich our understanding of what exactly happens during conflict situations and two main pathways are proposed to explain how conflicts escalate or de-escalate, which are summarised in Figures 2, 3 and 4, respectively. The different propositions are expanded on below.

Figure 2

The Proposed Model of the General Individual-level Conflict Process



5.1 Theoretical Implications

5.1.1 Unboxing the conflict process

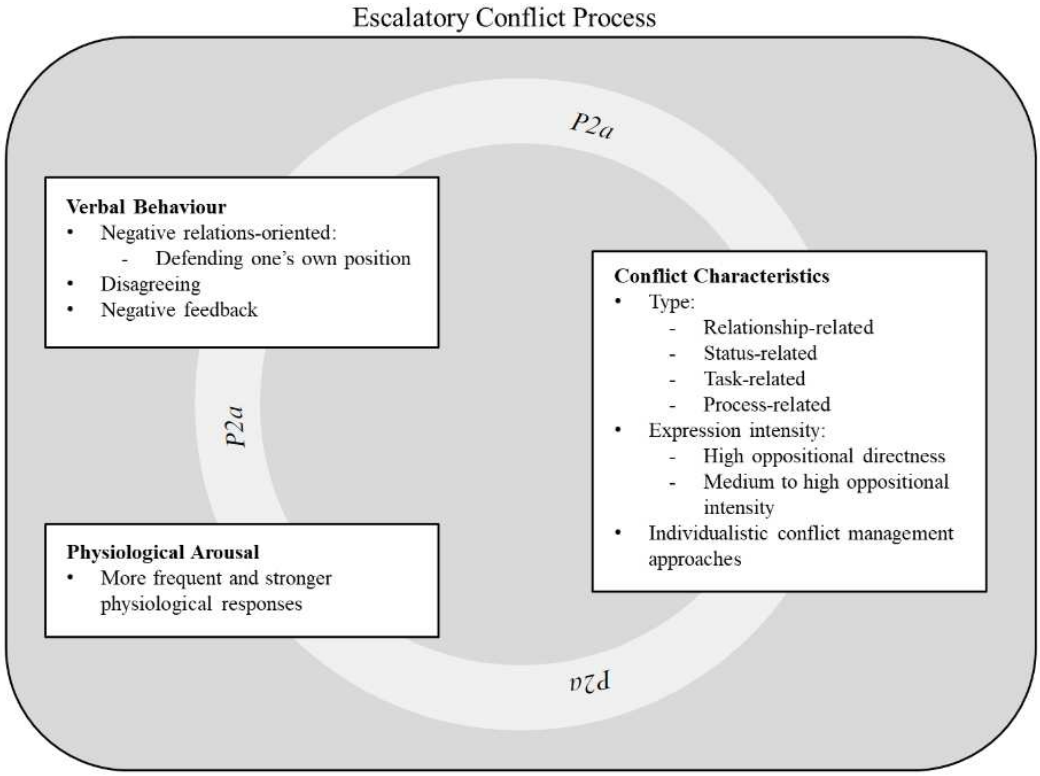
Firstly, this study suggests that conflict may be pervasive. During conflict situations, all individuals even those seemingly disengaged, displayed similar frequencies of significant skin conductance responses. This indicates that tension created by conflict situations might influence the overall atmosphere of the meeting, thereby also affecting those who seem to be merely observing the conflict, as evidenced by their increased physiological responses. Most observed conflicts were micro-conflicts, defined as "fleeting, minute-by-minute disagreements" (Paletz et al., 2011, p. 315). Due to the fleeting nature, participants often cannot recall their exact expressions and feelings, making it difficult to capture such conflicts through self-reported retrospective data (Paletz et al., 2011). Yet, with the innovative measures integrating video observations with physiological arousal data, it was possible to capture these micro-conflicts including the associated fleeting verbal interactions and accompanying feelings at the individual level. The findings reveal how verbal behaviours, conflict composition characteristics and physiological arousal interact and reinforce each other, thereby extending survey-based knowledge that verbal behaviours may be associated with distinct conflict types (Ballesteros-Rodriguez et al., 2020) and uncovering which specific behaviours, physiological arousal states and conflict characteristics are associated. This study proposes that this conflict process may manifest through emotional contagion. Emotional contagion refers to the tendency of individuals during social interactions to mimic the facial, vocal and postural expressions of others, leading to behavioural, attentional and emotional synchrony (Hatfield et al., 1993; Herrando & Constantinides, 2021). These subconscious processes occur in milliseconds (Hatfield et al., 1993) and therefore cannot be objectively captured through traditional research methods such as surveys or focus groups (Herrando & Constantinides, 2021). However, by measuring skin conductance responses, this study could capture these subconscious processes and showed that during conflicts, both actively engaged individuals and merely observing individuals displayed similar frequencies of physiological responses. Indeed, previous research found that observing another person's emotional state during social interactions automatically triggers the same autonomic nervous system (ANS) response in the observer (Anders et al., 2001; Hatfield et al., 1993; Herrando & Constantinides, 2021; Prochazkova & Kret, 2017). Hence, it is proposed that emotional contagion also occurs during conflict situations, through the (subconscious) synchronisation of both micro-verbal and non-verbal behaviours, such as body language and facial expressions, along with within-person physiological arousal processes. This helps to explain how conflicts unfold and impact the entire team, leading to the following proposition:

Proposition 1: Conflict may be pervasive, affecting all individuals in a meeting, including those who appear disengaged, as the tension and emotions from conflict situations can spread through the process of emotional contagion.

Secondly, instead of focusing on mediators or moderators to explain the conflicting results of the effects of conflict on performance, this study unboxes the conflict process itself, by revealing how conflicts may unfold through emotional contagion and specific co-occurring verbal behaviours, physiological responses and conflict composition characteristics that reinforce each other, thus aiding in explaining the relationship between conflict and performance and extending current knowledge on conflict processes (Weingart et al., 2015; Todorova et al., 2022). Based on the findings, two main pathways for conflicts to evolve are proposed: the *escalatory conflict process* and the *de-escalatory conflict process,* as illustrated in Figures 3 and 4, respectively.

Figure 3

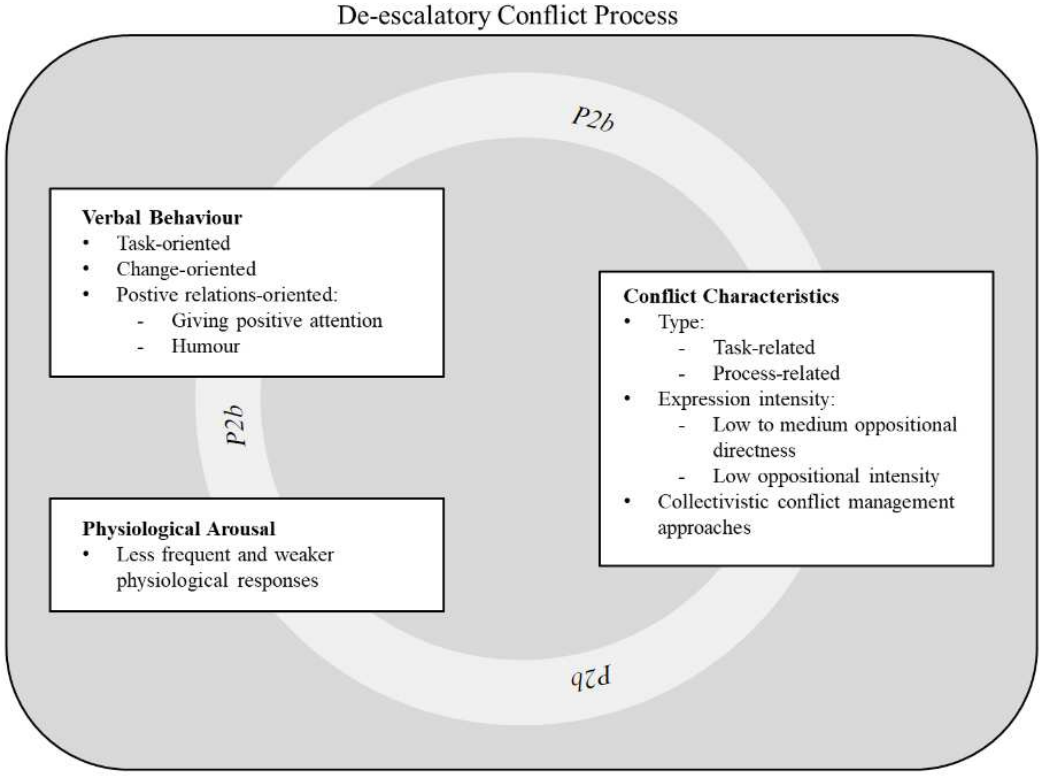
The Proposed Model of the Escalatory Conflict Process



The escalatory conflict process may unfold through higher frequencies of negative relations-oriented behaviours, more frequent and stronger physiological responses, and high-expression intensity conflicts, characterised by high oppositional directness and medium to high oppositional intensity. Due to the increased tension and strong opposition in the escalatory conflict process, team members may more often adopt individualistic conflict management approaches, leading to unresolved conflict situations. Previous research has linked relationship conflict and high-intensity conflicts with more frequent adoption of individualistic conflict management approaches which negatively affect performance (DeChurch et al., 2013; Maltarich et al., 2018; Todorova et al., 2022). This escalatory conflict process was particularly evident in high-expression intensity conflicts, associated with the specific verbal behavioural pattern of 'disagreeing', 'defending one's own position' and 'giving negative feedback', along with individual conflict management approaches, often leading to unresolved conflicts. During these high-expression intensity conflicts, individuals experienced the highest skin conductance responses, indicating stronger feelings about the situation. While this does not indicate the valence of these emotions (Boucsein, 2012), it suggests more intense emotions. High-expression intensity conflicts have been linked to stronger emotions (Todorova et al., 2022; Weingart et al., 2015). Hence, it is likely that through emotional contagion, team members mimicked each other's strong emotions, as evident in the arousal states, and therefore responded with corresponding expressions and negative relations-oriented behaviours, leading to increased tension and increasingly stronger emotions, resulting in the escalatory conflict process, which negatively impacts their performance.

Figure 4

The Proposed Model of the De-escalatory Conflict Process



In contrast, the de-escalatory conflict process may unfold through higher engagements in task-, change- and positive relations-oriented behaviours, resulting in low-expression intensity conflicts, with low to medium oppositional directness and low oppositional intensity. Within the de-escalatory conflict process, individuals may more often adopt collectivistic management approaches and resolve their conflicts. Previous research has linked task and low-expression intensity conflicts with collectivistic conflict management approaches and increased performance (DeChurch et al., 2013; Todorova et al., 2022). The findings show that during low-expression intensity conflicts, team members experienced fewer and weaker physiological responses. This suggests that due to the more neutral task- and process-related topics discussed during the de-escalatory conflict process, team members may experience less intense emotions and therefore may use more neutral expressions based on task- or change-oriented verbal behaviours, leading to low-expression intensity conflicts with lower tensions and benefitting from the positive effects of conflict on performance. This leads to the following two propositions:

Proposition 2a: Conflicts may evolve along two pathways: escalatory or de-escalatory conflict processes, with escalatory conflict processes characterised by a) negative relations-oriented behaviours, disagreeing, defending one's own position and negative feedback, b) frequent and strong physiological responses and c) high-expression intensity conflicts, reinforcing each other and negatively impacting performance levels.

Proposition 2b: Conflicts may evolve along two pathways: escalatory or de-escalatory conflict processes, with de-escalatory conflict processes characterised by a) more neutral task- and change-oriented behaviours, b) evoking less intense emotions, c) leading to low-intensity conflicts, reinforcing each other and positively impacting performance levels.

Nevertheless, the escalatory and de-escalatory conflict processes are not mutually exclusive. Individuals may transition an escalatory conflict process into a de-escalatory conflict process by engaging in positive relations-oriented behaviours, in particular giving positive attention and humour. This was often

performed by individuals with a high level of job performance. High-performing team members displayed a higher frequency of positive relations-oriented behaviours, specifically giving positive attention, combined with heightened alertness, as evidenced by their higher physiological arousal states, demonstrating an increased ability to appropriately react to social and environmental cues during conflict situations. This suggests that in teams with shared or distributive leadership, such as Agile teams, the extent to which team members adopt *relations-oriented* verbal leadership behaviours may influence the team member's performance levels. Previous research has shown that in traditional top-down teams with a single leader, verbal leadership behaviours, specifically relations-oriented behaviours, might impact team members' performance (Borgmann et al., 2016; Pletzer et al., 2023). This study extends this to (Agile) teams with shared leadership, where leadership is distributed among all team members (Magpili & Pazos, 2018), suggesting that an individual's engagement in more *positive* and fewer *negative* relations-oriented behaviours may be associated with higher job performance, emphasising the critical distinction between positive and negative relations-oriented behaviours (Meinecke et al., 2017).

Furthermore, this study answers the call for more integrative methods examining behavioural, physiological arousal and performance-related data (Arvey & Zhang, 2015; Christopoulos et al., 2019; Hoogeboom et al., 2021). The findings reveal that high-performing individuals may demonstrate heightened alertness to their team members' verbal and non-verbal cues during conflict situations, as evidenced by their significantly more frequent and higher physiological responses. Previous research on the influence of verbal behaviours and physiological responses on leader effectiveness, using the healthy variability thesis, found that when engaging in relations-oriented behaviours, leaders who exhibited more responsive arousal levels were more effective (Hoogeboom et al., 2021; Navarro & Rueff-Lopes, 2015). This study extends the healthy variability thesis to the individual team member level, where similar to effective leaders, high-performing team members demonstrate more responsive arousal levels to social and environmental cues compared to their low-performing counterparts. Hence, heightened alertness, indicated by greater fluctuations and responsiveness in arousal levels during conflict situations, may be associated with higher job performance, leading to the following proposition:

Proposition 3: An individual's adoption of more positive relations-oriented behaviours, fewer negative relations-oriented behaviours and more and stronger physiological responses during the conflict process, may be associated with higher job performance.

5.1.2 The influence of cultural diversity on the conflict process

The findings suggest that the adoption of task-oriented and positive relations-oriented behaviours, specifically humour, influences how conflicts unfold differently between culturally homogenous and heterogenous teams, which, in turn, influences the impact of the conflict process on performance. Multicultural team members' significantly higher adoption of task-oriented behaviours had a substantial impact on the conflict process, resulting in longer statements likely due to the need to explain their actions and thought processes more frequently. This might stem from a lack of shared mental models, which are shared beliefs and understandings about the team's relevant environment, including team tasks and expectations, that help to enhance effective communication (Triana et al., 2021). Establishing these shared norms and expectations is an essential step in the team development process (Bonebright, 2010). According to Tuckman's model (1965), teams must navigate through the forming, storming, and norming phases to achieve high performance in the performing stage. However, as the findings indicate, several multicultural teams do not yet have these shared expectations, thereby keeping them in the storming phase, characterised by frequent conflicts and intense emotions (Tuckman, 1965; Tuckman & Jensen, 1977). Thus, this lack of shared mental models and increased miscommunications may increase the potential for escalatory conflict processes in culturally diverse teams.

In contrast, the significantly higher adoption of positive relations-oriented behaviours, particularly humour, in monocultural teams, may result in more de-escalatory conflict processes. Previous research has shown that humour can influence the type of conflict (Andreea et al., 2023). The findings indicate

that monocultural team members used humour to diffuse the tension and elicit positive emotions, thereby transforming potential escalatory conflict processes into de-escalatory ones. The shared cultural perception of humour among team members in monocultural teams may facilitate the more frequent use of humorous expressions compared to their multicultural counterparts (Jiang et al., 2019). Hence, through positive relations-oriented behaviours, team members can de-escalate the conflict process, transitioning it towards its resolution phase. This is evidenced by the higher adoption of collectivistic conflict management approaches in monocultural teams compared to individualistic conflict management approaches in multicultural teams. Specifically, monocultural (Dutch) team members opted significantly more often for the compromising strategy. This might be due to the Dutch cultural inclination towards consensus-based decision-making, where decisions are typically made through unanimous group agreement (Meyer, 2014; Selvarajah et al., 2018), which often leads to finding the middle ground through compromise (Todorova et al., 2022). Indeed, previous research indicates that an individual's cultural background may influence their interpretation of conflict situations and the conflict management strategies they adopt (Krueger et al., 2022), which in turn strongly impacts the effect of conflict on performance (Todorova et al., 2022). Thus, monocultural team members may transition from an escalatory conflict process to a de-escalatory one by engaging in positive relations-oriented behaviours, particularly humour, diffusing the tension, and enabling the adoption of collectivistic conflict management approaches, which may positively affect performance (DeChurch et al., 2013; Todorova et al., 2022).

Proposition 4: The adoption of task-oriented and positive relations-oriented behaviours, specifically humour, can influence how conflicts unfold in mono- and multicultural Agile teams, with monocultural teams benefitting from shared cultural understandings and humour to transition to de-escalatory conflict processes and adopting collectivistic conflict management approaches, leading to improved performance, whereas multicultural teams may be more likely to engage in escalatory conflict processes, negatively impacting their performance.

Interestingly, mono- and multicultural team members did not show significantly different physiological responses, indicating that they did not experience the conflict differently, despite variations in verbal behaviours and conflict composition characteristics. This could be because both escalatory conflict processes and the transition from escalatory to de-escalatory conflict processes may elicit more intense emotions and physiological responses compared to neutral situations. Indeed, more positive or negative statements, rather than neutral ones, have been shown to evoke increased physiological reactions (Weis & Herbert, 2017). Hence, the negative emotions elicited by escalatory conflict processes, as well as the positive emotions elicited by the positive relations-oriented behaviours during the transition to de-escalatory conflict processes, may result in similar physiological responses, which might explain why both mono- and multicultural team members experienced similar physiological reactions.

5.1.3 The influence of a meeting's nature on the conflict process

While sprint planning meetings primarily focus on setting goals and tasks for the upcoming sprint (Ozcelikkan et al., 2022), the retrospective centres around the teams' successes, failures and potential improvements (Przybyłek et al., 2022). This suggests that due to the distinct nature of these meetings, the conflict process in sprint planning may be based on more neutral social and environmental cues, whereas during retrospectives with their focus on successes and failures, the conflict process may involve more positive and negative stimuli. This, in turn, may result in more and stronger physiological reactions and accompanying relations-oriented behaviours, increasing the potential for escalatory conflict processes during retrospectives. Indeed, the findings show that in retrospective meetings, team members exhibited significantly more and stronger physiological responses during conflicts and engaged more in positive (in specific, giving positive attention) and negative relations-oriented behaviours. Previous studies argued that positive and negative stimuli are inherent characteristics of relations-oriented behaviours (Hoogeboom et al., 2021) and these stimuli were found to elicit stronger physiological responses than neutral stimuli (Weis & Herbert, 2017). Therefore, retrospectives, by focusing on positive and negative team processes, may create an emotionally charged environment, with

more positive and negative relations-oriented behaviours, whereas sprint planning meetings might, inherently, foster an environment with more neutral stimuli and behaviours that do not evoke intense emotions.

Additionally, retrospectives may become more conducive to harmful conflicts that negatively affect job performance. All observed high-expression intensity conflicts, relationship conflicts and status conflicts occurred exclusively during retrospectives. These conflict characteristics are generally perceived as detrimental to performance (DeChurch et al., 2013; Greer & Dannals, 2017; Todorova et al., 2022). This is likely due to the retrospective's focus on positive and negative team processes, which can elicit stronger tensions that may easily escalate in high-expression intensity conflicts centred on personal characteristics. Indeed, retrospectives have been criticised in the past for becoming a moment to complain rather than to improve as a team (Przybyłek et al., 2022). Thus, due to the distinct nature of retrospective meetings, Agile team members may experience stronger physiological responses and engage more in positive *and* negative relations-oriented behaviours during conflict situations, while this nature might also increase the likelihood of conflicts evolving into an escalatory conflict process, with can negatively affect performance, leading to the following proposition:

Proposition 5: Due to the distinct nature of retrospective meetings, focusing on team successes and failures, Agile team members may experience stronger physiological responses and engage more in positive and negative relations-oriented behaviours during conflicts, increasing the likelihood of escalatory conflict processes.

All in all, this study uncovered how conflicts unfold within Agile teams through the process of emotional contagion, integrating individual-level behavioural and physiological data and capturing the often-overlooked micro-behaviours and fleeting emotional responses during conflict situations. The escalatory and de-escalatory conflict processes were proposed as the two main pathways for conflicts to unfold. Additionally, the study shows how these may be impacted by cultural diversity and the nature of a meeting, thereby providing further insights into the conflicting results on the relationship between conflicts and performance.

5.2 Practical Implications

The findings of this study offer several valuable insights for practitioners. Firstly, organisations, Agile coaches and team members should pay close attention to the individual-level processes, particularly the verbal behaviours individuals adopt and their corresponding physiological responses, that add to the team-level dynamics during conflict situations. During conflict management training, the focus should be on individual-level verbal behaviours and their potential to (de)escalate or resolve conflicts. To improve their performance, team members should strive to engage in positive relations-oriented behaviours, while minimising their negative relations-oriented behaviours. Especially the positive relations-oriented behaviour of 'giving positive attention' proved to be important for high-performing individuals. This can be achieved by, for example, showing sympathy for others' concerns, engaging in friendly acts like getting coffee for a colleague, or showing personal interest, all of which foster strong interpersonal relationships within the team (Hoogeboom et al., 2021; Yukl, 2012). Organisations could offer training opportunities teaching team members to select the appropriate behaviours and to understand when to engage in task- and relations-oriented behaviours, which are key to preventing conflicts from escalating and minimising high-expression intensity and relationship conflicts, allowing teams to benefit from the positive effects of conflict, while simultaneously reducing its adverse effects on job performance.

Secondly, conflicts affect not only those actively involved in the conflict and engaged in verbal behaviours but also seemingly more 'passive' individuals, as evidenced by their similar frequency of skin conductance responses. Sometimes, individuals who appeared rather disengaged showed even more SCRs than individuals actively participating in the conflict. This suggests that conflicts increase the tensions within the team's meeting, which is then also experienced by the other team members. Thus,

conflict situations do not only impact the directly involved parties but the entire team. Therefore, it becomes increasingly important to manage conflict, even when it only involves two team members, as through the concept of emotional contagion, its occurrence influences the overall team atmosphere. By effectively mitigating the adverse effects of conflict while simultaneously harnessing its positive potential, the overall team atmosphere can be improved.

Thirdly, high-performing individuals were more alert during conflict situations, showing higher SCR frequencies and amplitudes. Thus, to enhance performance during conflict situations, individuals should be responsive to the signals in the environment, i.e., appropriately respond to other team members' verbal behaviours and non-verbal cues. In particular, high-performing team members are adept at discerning when to remain silent and when to speak, focusing on solutions rather than past problems, recognising the feelings of other team members, and acting as connectors within the team. They effectively translate different communication styles, enhancing communication in the team. These behaviours are crucial for transitioning an escalatory conflict process into a de-escalatory one. Thus, to enhance performance, individuals should stay alert to what is happening in the environment during conflicts, i.e., the verbal and non-verbal cues of other team members, and respond accordingly. This does not always entail a verbal response, but rather a heightened awareness and the ability to discern when action is necessary.

Fourthly, organisations should acknowledge the differences between mono- and multicultural teams and how these lead to distinct behavioural patterns and conflict situations. The pitfall of multicultural teams during conflicts is the excessive adoption of task-oriented behaviours, which can limit the opportunity for relations-oriented behaviours. A potential solution to address this issue is creating shared mental models. These shared understandings of team tasks and expectations minimise the need for excessive task-oriented behaviours, enhancing effective communication and subsequently boosting performance (Arendt et al., 2024; Triana et al., 2021).

Lastly, organisations and Agile teams should be aware that retrospectives, given their nature, can be a conducive environment for conflicts, especially those that are detrimental to performance, such as high-expression intensity conflicts, relationship conflicts and individualistic conflict management approaches. To mitigate these harmful conflicts, it is crucial to minimise negative relations-oriented behaviours during retrospectives. Furthermore, Agile coaches should highlight that the goal of retrospectives is team improvement, rather than providing a moment to complain. Practical tools such as retrospective games (Przybyłek et al., 2022) or other structured activities, may help to navigate the retrospective meeting, preventing a negative atmosphere conducive to the emergence of escalatory conflict processes. By creating a constructive environment during retrospectives, team members can more effectively address issues and enhance job performance.

6. Limitations and Future Research

As with any research, this study is not without limitations. Firstly, the sample size at the individual level, but especially at the team level, was relatively small. Due to the COVID-19 pandemic, the data collection process became increasingly difficult resulting in a smaller sample size at the team level. Furthermore, some teams had incomplete data, such as being only recorded at one moment in time or missing skin conductance data, leading to their exclusion from the sample. However, by triangulating the video-coded verbal behaviours with the skin conductance responses and expert performance ratings, the validity and credibility of the findings were enhanced (Cohen et al., 2018; Noble & Heale, 2019). Additionally, this study uncovered several differences that, while only marginally significant with this sample size, could become more pronounced in large-sample studies.

Secondly, all data were exclusively collected from one financial service organisation in the Netherlands. While this could introduce potential biases due to firm-specific factors and may potentially limit the generalisability of the findings, it also allowed for a detailed and focused study, providing a rich understanding of the conflict dynamics within this specific context. Future research can build on these findings by expanding the sample size and including additional companies, sectors and countries to further validate and generalise the findings. Thirdly, team participation was voluntary. While this could potentially introduce intrinsic participation biases (Keeble et al., 2013) as it is plausible that only relatively high-performing teams and individuals would be inclined to participate in an observational study, it also ensured active and engaged participants. Therefore, future research could complement these findings by including low-performing teams and team members to improve the representativeness of the sample.

Fourthly, cross-validation of identified conflicts was conducted between several independent coders, ensuring a rigorous and thorough analysis. While certain discrepancies could not be resolved due to differences in subjective interpretation, the intercoder reliability of 86.26% is generally perceived as nearly perfect agreement (Landis & Koch, 1977; O'Connor & Joffe, 2020). Including an additional coder in future studies might help to further enhance the reliability of the conflict identification process. Furthermore, this study analysed two important meetings in an Agile team's sprint: sprint planning and retrospectives. These two meetings presented strong examples due to their distinctly different natures as reflected in their primary objectives (Ozcelikkan et al., 2022; Przybyłek et al., 2022). Nevertheless, future studies could examine additional meetings, such as refinements or daily stand-up meetings, to determine whether the different natures of these meetings lead to additional differences in behavioural patterns, physiological responses and conflict characteristics.

Additionally, all verbal behaviours observed during the meetings were systematically coded based on the validated verbal codebook developed by the OBCC group at the University of Twente (Hoogeboom & Wilderom, 2015; Hoogeboom et al., 2021; Van Dun et al., 2017; Van Dun & Wilderom, 2021). For each meeting, two coders independently performed the coding and then compared and discussed their results to create one final event log with 100% agreement, ensuring a reliable and rigorous coding process. While the coders underwent extensive training, the behaviour of 'listening' was sometimes coded incorrectly. 'Listening' is defined in the codebook as active listening, involving (non-)verbal behaviours such as eye contact, nodding and brief meaningful responses (Cooney et al., 2020), which may improve interpersonal relationships (Yip & Fisher, 2022) and therefore belongs to the positive relations-oriented behavioural category. In some instances, alternative forms of listening, such as listening without making eye contact, were mistakenly coded as active listening. This behaviour does not necessarily contribute to the quality of interpersonal relationships and can even generate additional negative responses (Manusov & Trees, 2002; Yip & Fisher, 2022). Since listening behaviours constituted a significant portion of verbal behaviours, including 'listening' as a positive relations-oriented behaviour would skew the results. Therefore, it was decided to exclude this behaviour from the positive relations-oriented category and treat it as a distinct category to minimise potential biases. Hence,

future research could facilitate through additional training of the coders that only active listening behaviours are coded as listening and included in the positive relations-oriented category.

Finally, the skin conductance responses were collected in a field setting. Whilst this may limit the ability to control for a variety of factors that might impact physiological responses, such as room temperature, the recall of emotionally salient events or mental effort (Hoogeboom et al., 2021), this approach captures data on real-life work interactions. Hence, future studies could benefit from a quasi-experimental setting, which would provide opportunities to establish clear causal links between specific verbal behaviours and corresponding physiological responses.

7. Conclusion

This exploratory study investigated the relationship between verbal behaviours and within-person physiological arousal during conflict situations in sprint planning and retrospective meetings, focusing on variations between mono- and multicultural Agile team members and their effects on job performance, using video-recorded real-life work interactions. Based on the triangulation of physiological, behavioural and performance data, this research answers the call for more objective and integrative analyses of moments of conflict (Christopoulos et al., 2019; Hoogeboom et al., 2021; Zhao et al., 2019). The findings of this study reveal how conflicts unfold within Agile teams, through distinct verbal behaviours and physiological responses that are associated with different conflict characteristics, which reinforce each other and manifest differently in mono- and multicultural teams. The verbal behaviours adopted, and the levels of physiological arousal experienced during conflict situations are linked to job performance. High job performance is associated with a higher frequency of positive relations-oriented, a lower frequency of negative relations-oriented behaviours and more frequent and stronger skin conductance responses, indicating heightened alertness during conflict situations. Nevertheless, conflicts influenced the overall atmosphere of the meeting through the phenomenon of emotional contagion, eliciting physiological responses from all participants, not just those actively engaged in the conflict. Hence, effective conflict management through the adaptation of verbal behaviours at the individual level is crucial for leveraging the positive effects of conflicts and enhancing job performance in Agile teams.

8. References

Anders, S., Heinzle, J., Weiskopf, N., Ethofer, T., & Haynes, J. D. (2011). Flow of affective information between communicating brains. *NeuroImage, 54*(1), 439–446. https://doi.org/10.1016/j.neuroimage.2010.07.004

Andreea, G., Curșeu, P.L., & Fodor, O.C. (2023). Jokes and quarrels: a cross-cultural investigation of humor and conflict transformation in groups. *International Journal of Conflict Management, 34*(5), 945-960. https://doi.org/10.1108/IJCMA-02-2023-0027

Arendt, J. F. W., Kugler, K. G., & Brodbeck, F. C. (2024). When team members (dis)agree about social rules and norms: a shared relational models approach to explaining team viability. *Current Psychology, 43*, 19121-19139. https://doi.org/0.1007/s12144-024-05680-8

Arvey, R. D., & Zhang, Z. (2015). Biological Factors in Organizational Behavior and I/O Psychology: An Introduction to the Special Section. *Applied Psychology, 64*(2), 281-285. https://doi.org/10.1111/apps.12044

Aslani, S., Ramirez-Marin, J., Brett, J., Yao, J., Sehmani-Azad, Z., Zhang, Z. X., Tinsley, C., Weingart, L., & Adair, W. (2016). Dignity, face, and honor cultures: A study of negotiation strategy and outcomes in three cultures. *Journal of Organizational Behavior, 37*(8), 1178-1201. https://doi.org/10.1002/job.2095

Ayoko, O. B. (2007). Communication openness, conflict events and reactions to conflict in culturally diverse workgroups. *Cross Cultural Management: An International Journal, 14*(2), 105-124. https://doi.org/10.1108/13527600710745723

Bai, Y., Lin, L., & Li, P. P. (2016). How to enable employee creativity in a team context: A cross-level mediating process of transformational leadership. *Journal of Business Research, 69*(9), 3240-3250. https://doi.org/10.1016/j.jbusres.2016.02.025

Ballesteros-Rodríguez, J. L., Díaz-Díaz, N. L., Aguiar-Díaz, I., & De Saá-Pérez, P. (2020). The Role of Leadership in the Management of Conflict and Knowledge Sharing in the Research Groups of a Spanish Public University. *Public Organization Review, 20,* 421-436. https://doi.org/10.1007/s11115-019-00451-7

Bauhoff, S. (2014). *Self-Report Bias in Estimating Cross-Sectional and Treatment Effects.* In A. C. Michalos (Ed.), *Encyclopedia of Quality of Life and Well-Being Research* (pp. 5798-5800). Springer, Dordrecht.

Baumeister, R. F., Vohs, K. D., & Funder, D. C. (2007). Psychology as the Science of Self-Reports and Finger Movements: Whatever Happened to Actual Behavior? *Perspectives on Psychological Science, 2*(4), 396–403. https://doi.org/10.1111/j.1745-6916.2007.00051.x

Beck, K., Beedle, M., van Bennekum, A., Cockburn, A., Cunningham, W., Fowler, M., Grenning, J., Highsmith, J., Hunt, A., Jeffries, R., Kern, J., Marick, B., Martin, R. C., Mellor, S., Schwaber, K., Sutherland, J., & Thomas, D. (2001). The Agile Manifesto. https://agilemanifesto.org/

Behfar, K. J., Kern, M., & Brett, J. (2006). Managing Challenges in Multicultural Teams. *Research on Managing Groups and Teams, 9*, 233-262. https://doi.org/10.1016/S1534-0856(06)09010-4

Behfar, K. J., Peterson, R. S., Mannix, E. A., & Trochim, W. M. K. (2008). The Critical Role of Conflict Resolution in Teams: A Close Look at the Links Between Conflict Type, Conflict Management Strategies, and Team Outcomes. *Journal of Applied Psychology, 93*(1), 170-188. https://doi.org/10.1037/0021-9010.93.1.170

Behrendt, P., Matz, S., & Göritz, A. S. (2017). An integrative model of leadership behavior. *The Leadership Quarterly, 28*(1), 229-244. https://doi.org/10.1016/j.leaqua.2016.08.002

Bendersky, C., Bear, J., Behfar, K., Weingart, L. R., Todorova, G., & Jehn, K. A. (2014). *Identifying gaps between the conceptualization of conflict and its measurement*. In O. B. Ayoko, N. M. Ashkanasy, & K. A. Jehn (Eds.), *Handbook of conflict management research* (pp. 79–89). Edward Elgar Publishing.

Bendersky, C., & Hays, N. A. (2012). Status Conflict in Groups. *Organization Science, 23*(2), 323–340. https://doi.org/10.1287/orsc.1110.0734

Bergstrom, J. R., Duda, S., Hawkins, D. , & McGill, M. (2014). *Physiological Response Measurements.* In J. R. Bergstrom & A. J. Schall (Eds.), *Eye Tracking in User Experience Design* (pp. 81-108). Morgan Kaufmann

Berkowitz, L. (1990). On the formation and regulation of anger and aggression: A cognitive-neoassociationistic analysis. *The American Psychologist, 45*(4), 494–503. https://doi.org/10.1037//0003-066X.45.4.494.

Bonebright, D. A. (2010). 40 years of storming: A historical review of Tuckman's model of small group development. *Human Resource Development, 13*(1), 111-120. https://doi.org/10.1080/13678861003589099

Bono, J. E., Foldes, H. J., Vinson, G., & Muros, J. P. (2007). Workplace emotions: The role of supervision and leadership. *Journal of Applied Psychology, 92*(5), 1357–1367. https://doi.org/10.1037/0021-9010.92.5.1357

Borgmann, L., Rowold, J., & Bormann, K. C. (2016). Integrating leadership research: a meta-analytical test of Yukl's meta-categories of leadership. *Personnel Review, 45*(6), 1340-1366. https://doi.org/10.1108/PR-07-2014-0145

Boucsein, W. (2012). *Electrodermal activity* (2nd ed.). Springer

Boucsein, W., Fowles, D., Grimnes, S., Ben-Shakhar, G., Roth, W., Dawson, M., & Filion, D. (2012). Publication recommendations for electrodermal measurements. *Psychophysiology, 49*(8), 1017-1034. https://doi.org/10.1111/j.1469-8986.2012.01384.x

Bradley, M. M., Miccoli, L., Escrig, M. A., & Lang, P. J. (2008). The pupil as a measure of emotional arousal and autonomic activation. *Psychophysiology, 45*(4), 602–607. https://doi.org/10.1111/j.1469-8986.2008.00654.x

Braithwaite, J. J., Watson, D. G., Jones, R., & Rowe, M. (2013). A guide for analysing electrodermal activity (EDA) & skin conductance responses (SCRs) for psychological experiments. *Psychophysiology, 49*(1), 1017-1034.

Brett, J., Behfar, K., & Sanchez-Burks, J. (2014). *Managing cross-culture conflicts: A close look at the implication of direct versus indirect confrontation.* In O.B. Ayoko, N.M. Ashkanasy, K.A. Jehn (Eds.), *Handbook of conflict management research* (pp. 136-154). Edward Elgar Publishing.

Briggs, C. Q., Gardner, D. M., & Ryan, A. M. (2023). Competence-Questioning Communication and Gender: Exploring Mansplaining, Ignoring, and Interruption Behaviors. *Journal of Business Psychology, 38*, 1325-1353. https://doi.org/10.1007/s10869-022-09871-7

Chen, M. J., & Ayoko, O. B. (2012). Conflict and trust: the mediating effects of emotional arousal and self-conscious emotions. *International Journal of Conflict Management, 23*(1), 19-56. https://doi.org/10.1108/10444061211199313

Christopoulos, G. I., Uy, M. A., & Yap, W. J. (2019). The Body and the Brain: Measuring Skin Conductance Responses to Understand the Emotional Experience. *Organizational Research Methods, 22*(1), 394-420. https://doi.org/10.1177/1094428116681073

Cohen, L., Manion, L., & Morrison, K. (2018). *Research Methods in Education* (8th ed.). Routledge.

Conboy, K. (2009). Agility from First Principles: Reconstructing the Concept of Agility in Information Systems Development. *Information Systems Research, 20*(3), 317-480. https://doi.org/10.1287/isre.1090.0236

Cooney, G., Mastroianni, A. M., Abi-Esber, N., & Brooks, A. W. (2020). The many minds problem: disclosure in dyadic versus group conversation. *Current opinion in psychology, 31*, 22–27. https://doi.org/10.1016/j.copsyc.2019.06.032

Creswell, J. W., Clark, V. L. P., Gutmann, M. L., & Hanson, W. E. (2003). *Advances in mixed methods in research designs.* In A. Tashakkori, & C. Teddlie (Eds.), *Handbook of mixed methods in social and behavioral research* (pp. 209-240). SAGE Publishing.

DeChurch, L. A., Mesmer-Magnus, J. R., & Doty, D. (2013). Moving beyond relationship and task conflict: Toward a process-state perspective. *Journal of Applied Psychology, 98*(4), 559-578. https://doi.org/10.1037/a0032896

De Dreu, C. K. W., & Gelfand, M. J. (2008). *Conflict in the workplace: Sources, functions, and dynamics across multiple levels of analysis.* In C. K. W. De Dreu & M. J. Gelfand (Eds.), *The psychology of conflict and conflict management in organizations* (pp. 3–54). Taylor & Francis Group/Lawrence Erlbaum Associates.

De Dreu, C. K. W., & Weingart, L. R. (2003). Task versus relationship conflict, team performance, and team member satisfaction: a meta-analysis. *Journal of Applied Psychology, 88*(4), 741-749. https://doi.org/10.1037/0021-9010.88.4.741

Deits-Lebehn, C., Baucom, K. J. W., Crenshaw, A. O., Smith, T. W., & Baucom, B. R. W. (2020). Incorporating physiology into the study of psychotherapy process. *Journal of counseling psychology*, *67*(4), 488–499. https://doi.org/10.1037/cou0000391

De Wit, F., Greeg, L., & Karen, J. (2012). The Paradox of Intragroup Conflict: A Meta-Analysis. *The Journal of Applied Psychology, 97*(2), 360-390. https://doi.org/10.1037/a0024844

Dingsøyr, T., Moe, N. B., & Seim, E. A. (2018). Coordinating Knowledge Work in Multiteam Programs: Findings From a Large-Scale Agile Development Program. *Project Management Journal, 49*(6), 64-77. https://doi.org/10.1177/8756972818798980

Dybå, T., & Dingsøyr, T. (2008). Empirical studies of agile software development: A systematic review. *Information and Software Technology, 50*(9/10), 833-859. https://doi.org/10.1016/j.infsof.2008.01.006.

Erez, A., Misangyi, V. F., Johnson, D. E., LePine, M. A., & Halverson, K. C. (2008). Stirring the hearts of followers: Charismatic leadership as the transferal of affect. *Journal of Applied Psychology, 93*(3), 602–616. https://doi.org/10.1037/0021-9010.93.3.602

Figner, B., & Murphy, R. O. (2011). *Using skin conductance in judgment and decision making research.* In M. Schulte-Mecklenbeck, A. Kuehberger, & R. Ranyard (Eds.), *A handbook of process tracing methods for decision research.* Psychology Press.

Gibson, C. B., Cooper, C. D., & Conger, J. A. (2009). Do you see what we see? The complex effects of perceptual distance between leaders and teams. *Journal of Applied Psychology, 94*(1), 62-76. https://doi.org/10.1037/a0013073

Greer, L. L., & Dannals, J. E. (2017). *Conflict in Teams.* In E. Salas, R. Rico, J. Passmore (Eds.), *The Wiley Blackwell Handbook of the Psychology of Team Working and Collaborative Processes* (pp. 317-343). John Wiley & Sons Ltd.

Hatfield, E., Cacioppo, J. T., & Rapson, R. L. (1993). Emotional contagion. *Current directions in psychological science, 2*(3), 96-100. https://doi.org/10.1111/1467-8721.ep10770953

Heaphy, E. D., & Dutton, J. E. (2008). Positive social interactions and the human body at work: linking organizations and physiology. *The Academy of Management Review, 33*(1), 137–162. https://doi.org/10.5465/amr.2008.27749365.

Herrando, C., & Constantinides, E. (2021). Emotional contagion: A brief overview and future directions. *Frontiers in Psychology, 12*. https://doi.org/10.3389/fpsyg.2021.712606

Hoda, R., Salleh, N., & Grundy, J. (2018). The Rise and Evolution of Agile Software Development. *IEEE Software, 35*(5), 58-63. https://doi.org/10.1109/MS.2018.290111318

Hoogeboom, M. A. M. G., Saeed, A., Noordzij, M. L., & Wilderom, C. P. M. (2021). Physiological arousal variability accompanying relations-oriented behaviors of effective leaders: Triangulating skin conductance, video-based behavior coding and perceived effectiveness. *The Leadership Quarterly, 32*(6). https://doi.org/10.1016/j.leaqua.2020.101493

Hoogeboom, M. A. M. G., & Wilderom, C. P. M. (2015). *Effective leader behaviors in regularly held staff meetings: Surveyed vs videotaped and video-coded observations*. In J. A. Allen, N. Lehmann-Willenbrok, & S. G. Rogelberg (Eds.), *The Cambridge handbook of meeting science* (pp. 381-412). Cambridge University Press.

Hossain, E., Babar, M. A., & Paik, H. (2009). Using Scrum in Global Software Development: A Systematic Literature Review. *Proceedings of the Fourth IEEE International Conference on Global Software Engineering,* 175-184. https://doi.org/10.1109/ICGSE.2009.25

Jehn, K. A. (1995). A Multimethod Examination of the Benefits and Detriments of Intragroup Conflict. *Administrative Science Quarterly, 40*(2), 256-282. https://doi.org/10.2307/2393638

Jehn, K. A. (1997). A Qualitative Analysis of Conflict Types and Dimensions in Organizational Groups. *Administrative Science Quarterly, 42*(3), 530-557. https://doi.org/10.2307/2393737

Jehn, K., Greer, L., & Rupert, J. (2008). *Diversity, conflict, and their consequences.* In A. Brief (Ed.), *Diversity at Work* (pp. 127-174). Cambridge: Cambridge University Press.

Jiang, T., Li, H., & Hou, Y. (2019). Cultural Differences in Humor Perception, Usage, and Implications. *Frontiers in Psychology, 10.* https://doi.org/10.3389/fpsyg.2019.00123

Junker, T. L., Bakker, A. B., Gorgievski, M. J., & Derks, D. (2022). Agile work practices and employee proactivity: A multilevel study. *Human Relations, 75*(12), 2189-2217. https://doi.org/10.1177/00187267211030101

Kaushal, R., & Kwantes, C. T. (2006). The role of culture and personality in choice of conflict management strategy. *International Journal of Intercultural Relations, 30*(5), 579-603. https://doi.org/10.1016/j.ijintrel.2006.01.001

Keeble, C., Barber, S., Law, G. R., & Baxter, P. D. (2013). Participation Bias Assessment in Three High-Impact Journals. *Sage Open, 3*(4). https://doi.org/10.1177/2158244013511260

Krueger, K. L., Diabes, M. A., & Weingart, L. R. (2022). The psychological experience of intragroup conflict. *Research in Organizational Behavior, 42.* https://doi.org/10.1016/j.riob.2022.100165

Koch, J., Drazic, I., & Schermuly, C. C. (2023). The affective, behavioural and cognitive outcomes of agile project management: A preliminary meta-analysis. *Journal of Occupational and Organizational Psychology, 96*(3), 678-706. https://doi.org/10.1111/joop.12429

Koch, J., & Schermuly, C. C. (2021). Who is attracted and why? How agile project management influences employee's attraction and commitment. *International Journal of Managing Projects in Business, 14*(3), 699-720. https://doi.org/10.1108/IJMPB-02-2020-0063

Kotlyar, I., & Karakowsky, L. (2007). Falling Over Ourselves to Follow the Leader: Conceptualizing Connections Between Transformational Leader Behaviors and Dysfunctional Team Conflict. *Journal of Leadership & Organizational Studies, 14*(1), 38-49. https://doi.org/10.1177/1071791907304285

Landis J. R., Koch G. G. (1977). The measurement of observer agreement for categorical data. *Biometrics, 33*(1), 159–174. https://doi.org/10.2307/2529310

Lee, M. C. C., Sim, B. Y. H., Tuckey, M. R. (2024). Comparing effects of toxic leadership and team social support on job insecurity, role ambiguity, work engagement, and job performance: A multilevel mediational perspective. *Asia Pacific Management Review, 29*(1), 115-126. https://doi.org/10.1016/j.apmrv.2023.09.002

Lehtinen, T. O. A., Itkonen, J., & Lassenius, C. (2017). Recurring opinions or productive improvements—what agile teams actually discuss in retrospectives. *Empirical Software Engineering, 22*, 2409-2452. https://doi.org/10.1007/s10664-016-9464-2

Leung, A. K. Y., & Cohen, D. (2011). Within- and between-culture variation: Individual differences and the cultural logics of honor, face, and dignity cultures. *Journal of Personality and Social Psychology, 100*(3), 507–526. https://doi.org/10.1037/a0022151

Lucas, R. E., & Baird, B. M. (2006). *Global self-assessment.* In M. Eid & E. Diener (Eds.), *Handbook of multimethod measurement in psychology* (pp. 29-42). American Psychological Association.

Lund, T. (2012). Combining Qualitative and Quantitative Approaches: Some Arguments for Mixed Methods Research. *Scandinavian Journal of Educational Research, 56*(2), 155-165. https://doi.org/10.1080/00313831.2011.568674

Magpili, N. C., & Pazos, P. (2018). Self-Managing Team Performance: A Systematic Review of Multilevel Input Factors. *Small Group Research, 49*(1), 3-33. https://doi.org/10.1177/1046496417710500

Malik, M., & Orr, S. (2022). A configurational examination of agile development as a sociotechnical system. *Industrial Marketing Management, 104*, 325-339. https://doi.org/10.1016/j.indmarman.2022.05.003

Maltarich, M. A., Kukenberger, M., Reilly, G., & Mathieu, J. (2018). Conflict in Teams: Modelling Early and Late Conflict States and the Interactive Effects of Conflict Processes. *Group & Organization Management, 43*(1), 6-37. https://doi.org/10.1177/1059601116681127

Mannix, E., & Neale, M. A. (2005). What Differences Make a Difference?: The Promise and Reality of Diverse Teams in Organizations. *Psychological Science in the Public Interest*, *6*(2), 31-55. https://doi.org/10.1111/j.1529-1006.2005.00022.x

Manusov, V., & Trees, A. R. (2002). "Are you kidding me?": The role of nonverbal cues in the verbal accounting process. *Journal of Communication, 52*(3), 640–656. https://doi.org/10.1111/j.1460-2466.2002.tb02566.x

Marder, B., Ferguson, P., Marchant, C., Brennan, M., Hedler, C., Rossi, M., Black, S., & Doig, R. (2021). 'Going agile': Exploring the use of project management tools in fostering psychological safety in group work within management discipline courses. *The International Journal of Management Education, 19*(3). https://doi.org/10.1016/j.ijme.2021.100519

Meier, L. L., Gross, S., Spector, P. E., & Semmer, N. K. (2013). Relationship and task conflict at work: interactive short-term effects on angry mood and somatic complaints. *Journal of occupational health psychology, 18*(2), 144–156. https://doi.org/10.1037/a0032090

Meinecke, A. L., Lehmann-Willenbrock, N. K., & Kauffeld, S. (2017). What happens during annual appraisal interviews? How leader-follower interactions unfold and impact interview outcomes. *Journal of Applied Psychology, 102*(7), 1054-1074. https://doi.org/10.1037/apl0000219

Motowidlo, S. J. (2003). *Job Performance*. In W. C. Borman, D. R. Ilgen & R. J. Klimoski (Eds.), *Handbook of Psychology, Industrial and Organizational Psychology* (pp. 39-52). John Wiley & Sons Ltd.

Navarro, J., & Rueff-Lopes, R. (2015). Healthy variability in organizational behavior: empirical evidence and new steps for future research. *Nonlinear Dynamics, Psychology, and Life Sciences, 19*(4), 529–552. https://doi.org/10.2307/258555

Nerur, S., Mahapatra, R., & Mangalaraj, G. (2005). Challenges of migrating to agile methodologies. *Communications of the ACM, 48*(5), 720-78. https://doi.org/10.1145/1060710.1060712

Noble, H., & Heale, R. (2019). Triangulation in research, with examples. *Evidence-Based Nursing, 22*(3), 67-68. https://doi.org/10.1136/ebnurs-2019-103145

Noldus, L. P. J. J., Trienes, R. J. H., Hendriksen, A. H. M., Jansen, H., & Jansen, R. G. (2000). The observer video-pro: new software for the collection, management, and presentation of time-structured data from videotapes and digital media files. *Behavior Research Methods, Instruments, & Computers, 32*(1), 197–206. https://doi.org/10.3758/BF03200802

O'Connor, C., & Joffe, H. (2020). Intercoder Reliability in Qualitative Research: Debates and Practical Guidelines. *International Journal of Qualitative Methods, 19*. https://doi.org/10.1177/1609406919899220

O'Neill, T. A., Allen, N. J., & Hastings, S. E. (2013). Examining the "Pros" and "Cons" of Team Conflict: A Team-Level Meta-Analysis of Task, Relationship, and Process Conflict. *Human Performance,* 26(3), 236-260. https://doi.org/ 10.1080/08959285.2013.795573

Ozcelikkan., N., Tuzkaya, G., Alabas-Uslu, C., & Sennaroglu, B. (2022). A multi-objective agile project planning model and a comparative meta-heuristic approach. *Information and Software Technology, 151*(2). https://doi.org/10.1016/j.infsof.2022.107023

Paletz, S. B. F., Schunn, C. D., & Kim, K. H. (2011). Intragroup Conflict Under the Microscope: Micro-Conflicts in Naturalistic Team Discussions. *Negotiation and Conflict Management Research, 4*(4), 277-380. https://doi.org/10.1111/j.1750-4716.2011.00085.x

Peeters, T., Van De Voorde, K., & Paauwe, J. (2022). The effects of working agile on team performance and engagement. *Team Performance Management, 28*(1/2), 61-78. https://doi.org/10.1108/TPM-07-2021-0049

Pletzer, J. L., Breevaart, K., & Bakker, A. B. (2024). Constructive and destructive leadership in job demands-resources theory: A meta-analytic test of the motivational and health-impairment pathways. *Organizational Psychology Review, 14*(1), 131-165. https://doi.org/10.1177/20413866231197519

Prochazkova, E., & Kret, M. E. (2017). Connecting minds and sharing emotions through mimicry: A neurocognitive model of emotional contagion. *Neuroscience and biobehavioral reviews, 80*, 99–114. https://doi.org/10.1016/j.neubiorev.2017.05.013

Przybyłek, A., Albecka, M., Springer, O., & Kowalski, W. (2022). Game-based Sprint retrospectives: multiple action research. *Empirical Software Engineering, 27*(1). https://doi.org/10.1007/s10664-021-10043-z

Rzepka, A., & Bojar, E. (2020). Leadership as One of the Factors Shaping the Development of an Agile Organization. *Review of Integrative Business & Economics Research, 9(3),* 383-391.

Scheepers, D., & Ellemers, N. (2005). When the pressure is up: The assessment of social identity threat in low and high status groups. *Journal of Experimental Social Psychology, 41*(2), 192-200. https://doi.org/10.1016/j.jesp.2004.06.002

Schmidt, M., Steigenberger, N., Berndtzon, M., & Uman, T. C. (2023). Cultural diversity in health care teams: A systematic integrative review and research agenda. *Health Care Management Review, 48*(4), 311-322. https://doi.org/10.1097/HMR.0000000000000379

Schoemaker, P. J. H., Heaton, S., & Teece, D. (2018). Innovation, Dynamic Capabilities, and Leadership. *California Management Review*, *61*(1), 15-42. https://doi.org/10.1177/0008125618790246

Selvarajah, C., Meyer, D., De Waal, A., & Van der Heijden, B. (2018). Dutch Managerial Leadership Strategies: Managing Uncertainty Avoidance, Feminine-Related Social Roles, Organisation Prosperity Focus, and Work Orientation within A Polder Framework. *Contemporary Management Research, 14*(2). https://doi.org/10.7903/cmr.18279

Serrador, P., & Pinto, J. K. (2015). Does Agile work? – A quantitative analysis of agile project success. *International Journal of Project Management, 33,* 1040-1051. http://doi.org/10.1016/j.ijproman.2015.01.006

Spencer-Oatey, H. (2008). *Culturally speaking* (2nd ed.). Continuum International Publishing Group.

Stahl, G., Maznevski, M., Voigt, A., & Jonsen, K. (2010). Unravelling the effects of cultural diversity in teams: A meta-analysis of research on multicultural work groups. *Journal of International Business Studies, 41,* 690-709. https://doi.org/10.1057/jibs.2009.85

Tekleab, A. G., Quigley, N. R., & Tesluk, P.E. (2009). A Longitudinal Study of Team Conflict, Conflict Management, Cohesion, and Team Effectiveness. *Group & Organization Management, 34*(2), 170-205. https://doi.org/10.1177/1059601108331218

Todorova, G., Goh, K. T., Weingart, L. R. (2022). The effects of conflict type and conflict expression intensity on conflict management. *International Journal of Conflict Management, 33*(2), 245-272. https://doi.org/10.1108/IJCMA-03-2021-0042

Triana, M. C., Kim, K., Byun, S., Delgado, D. M., & Arthur Jr., W. (2021). The Relationship Between Team Deep-Level Diversity and Team Performance: A Meta-Analysis of the Main Effect, Moderators, and Mediating Mechanisms. *Journal of Management Studies, 58*(8), 2137-2179. https://doi.org/10.1111/joms.1267

Tuckman, B. W. (1965). Developmental sequence in small groups. *Psychological Bulletin, 63*(6), 384-399. https://doi.org/10.1037/h0022100

Tuckman, B. W., & Jensen, M. A. (1977). Stages of small-group development revisited. *Group and Organization Studies, 2*(4), 419-427. https://doi.org/10.1177/105960117700200404

Van Dun, D. H., Hicks, J. N., & Wilderom, C. P. M. (2017). Values and behaviors of effective lean managers: Mixed-methods exploratory research. *European Management Journal, 35*, 174-186. http://doi.org/10.1016/j.emj.2016.05.001

Van Dun, D. H., & Wildeorm, C. P. M. (2021). Improving high lean team performance through aligned behaviour-value patterns and coactive vicarious learning-by-doing. *International Journal of Operations & Production Management, 41*(13), 65-99. https://doi.org/10.1108/IJOPM-11-2020-0809

Van Woerkom, M., & Van Engen, M. L. (2009). Learning from conflicts? The relations between task and relationship conflicts, team learning and team performance. *European Journal of Work and Organizational Psychology, 18*(4), 381–404. https://doi.org/10.1080/13594320802569514

Vrana, S. R., & Gross, D. (2004). Reactions to facial expressions: effects of social context and speech anxiety on responses to neutral, anger, and joy expressions. *Biological Psychology, 66*(1), 63–78. https://doi.org/10.1016/j.biopsycho.2003.07.004.

Waller, L., Reitz, M., Poole, E., Riddell, P. M., & Muir, A. (2017). Experiential learning as preparation for leadership. *Leadership and Organization Development Journal, 38*(4), 513–529. https://doi.org/10.1108/LODJ-03-2015-0057.

Wang, J., Cheng, G. H. L., Chen, T., & Leung, K. (2019). Team creativity/innovation in culturally diverse teams: A meta-analysis. *Journal of Organizational Behavior, 40*(6), 693-708. https://doi.org/10.1002/job.2362

Weingart, L. R., Behfar, K. J., Bendersky, C., Todorova, G., & Jehn, K. A. (2015). The Directness and Oppositional Intensity of Conflict Expression. *Academy of Management Review, 40*(2). https://doi.org/10.5465/amr.2013.0124

Weis, P. P., & Herbert, C. (2017). Bodily Reactions to Emotional Words Referring to Own versus Other People's Emotions. *Frontiers in Psychology, 8.* https://doi.org/10.3389/fpsyg.2017.01277

Yip, J., & Fisher, C. M. (2022). Listening in Organizations: A Synthesis and Future Agenda. *Academy of Management Annals, 16*(2), 657-679. https://doi.org/10.5465/annals.2020.0367

Yousef, A. (2023). Investigating the Role of Critical Success Factors in Achieving the Success of Agile Projects in the Gaza Strip. *Journal of Computing and Information Technology, 30*(2), 117-137. https://doi.org/10.20532/cit.2022.1005543

Yukl, G., Gordon, A., & Taber, T. (2002). A Hierarchical Taxonomy of Leadership Behavior: Integrating a Half Century of Behavior Research. *Journal of Leadership & Organizational Studies, 9*(1), 15-32. https://doi.org/10.1177/107179190200900102

Yukl, G. (2012). Effective Leadership Behaviour: What We Know and What Questions Need More Attention. *Academy of Management Perspectives, 26*(4), 66-85. https://doi.org/10.5465/amp.2012.0088

Yukl, G., Mahsud, R., Prussia, G., & Hassan, S. (2019). Effectiveness of broad and specific leadership behaviours. *Personnel Review, 48*(3), 774-783. https://doi.org/10.1108/PR-03-2018-0100

Zhang, X. A., Cao, Q., & Tjosvold, D. (2011). Linking Transformational Leadership and Team Performance: A Conflict Management Approach. *Journal of Management Studies, 48*(7), 1586-1611. https://doi.org/10.1111/j.1467-6486.2010.00974.x

Zhao, Z. J., Chen, H. H., & Li, K. W. (2020). Management of Interpersonal Conflict in Negotiation with Chinese: A Perceived Face Threat Perspective. *Group Decision and Negotiation, 29*, 75-102. https://doi.org/10.1007/s10726-019-09645-2

Zhao, E., Thatcher, S. M. B., & Jehn, K. (2019). Instigating, Engaging in, and Managing Group Conflict: A Review of Literature Addressing the Critical Role of the Leader in Group Conflict. *Academy of Management Annals, 13*(1). https://doi.org/10.5465/annals.2016.0153