Towards an Observational Measure for Team Psychological Safety

Jasper W. Hoenderdos
University of Twente, The Netherlands

Advisors University of Twente:
Prof. Dr. C.P.M. Wilderom
Drs. A.M.G.M. Hoogeboom

Advisor House of Performance:
MSc. (PhDc) D.H. van Dun

May, 2013
Borculo, the Netherlands

Towards an Observational Measure for Team Psychological Safety

Table of Contents

Abstract

We set out to develop a new, more objective, measure for team psychological safety in the form of an observation scheme for workplace teams to aid further theoretical development and provide practitioners with a tool to track team development. As psychological safety is an affective state and thus not directly observable. We first aim to identify human behaviors representative of four constructs correlated to psychological safety, being information sharing, relationship-, task-, and process conflict. We conducted a Delphi study in which experts nominated workplace behaviors reflective of high psychological safety. The resulting twenty nine behaviors were subsequently observed in ten workplace teams: both in a meeting setting and in a regular work setting. We identified nine meeting behaviors and seven workplace behaviors which can aid in observing psychological safety. In order to check the validity of our newly developed measure, we also surveyed psychological safety and the four correlated constructs in the observed teams. We found support for our resulting observation scheme. This research provides a potentially fruitful approach to measuring psychological safety in a more objective manner compared to the self-report survey. Follow-up study is needed to further test, improve, and validate the observation scheme.

***Keywords**: Psychological safety, Observation, Conflict, Information sharing*

Introduction

A fast changing and unpredictable environment has increased the importance of organizational learning (Carmeli, Brueller, & Dutton, 2009). Learning is necessary for organizations to adapt to changes and jolts in the environment; and organizations that succeed in constantly learning and improving themselves can even create a competitive advantage (Carmeli et al., 2009; Garvin, Edmondson, & Gino, 2008). Thus an important question for organizations becomes: how can you create a learning organization? Both theory and practice have tried to answer this question by determining organizational requirements for creativity (Amabile, Conti, Coon, Lazenby, & Herron, 1996), developing flexible, ambidextrous organizations (Ciborra, 1996), setting up a quasi-formal structure (Schoonhoven & Jelinek, 1990) or implementing Lean management (Liker & Morgan, 2006). These constructions are intended to capitalize on the ideas and suggestions of individuals by enabling information flow and employee empowerment.

Nowadays, many organizations have moved from a traditional hierarchical structure to a more team-based structure, in which team processes have an increasing influence on both leader- and organizational effectiveness (Zaccaro, Rittman, & Marks, 2001). Therefore, Carmeli et al. (2009) argue that it is not only organizational learning that is essential for future success, but team learning is becoming increasingly important. Team learning "refers to the acquisition of knowledge, skills, and performance capabilities of an independent set of individuals through interaction and experience" (Kozlowski & Ilgen, 2006, p. 86). Team learning also entails the learning from failures in the form of team reflection on past mistakes or issues, which has indeed been found to increase subsequent team performance (Schippers, Homan, & Van Knippenberg, 2013).

However, organizations may vary in the degree in which they stimulate learning at the team level. One organizational theory that particularly emphasizes learning in teams is Lean management (Liker & Franz, 2011). Lean is a team-based system (Delbridge, Lowe, & Oliver, 2000) thriving for continuous improvement of work processes (Dibia & Spencer, 2010). A large part of this continuous improvement takes place in workplace teams (Delbridge et al., 2000; Liker & Franz, 2011). A workplace team is part of a larger organizational entity, has a clearly defined team membership, meets face-to-face on a regular basis and shares the responsibility for producing particular goods or services (Cohen & Bailey, 1997; Edmondson, 1999; Hackman, 1987). In order for Lean to succeed, employee involvement is essential (Womack & Jones, 2003).

In contrast to organizational models such as the quasi-formal organization (Schoonhoven & Jelinek, 1990), which attempts to capitalize upon informal lower-level idea generation by setting up new project teams and cross-functional teams, Lean essentially strives for a bottom-up directionality of, mainly incremental, innovations from the regular workplace (Liker & Franz, 2011). In Lean the workplace or "gemba" is considered a main driver of process and product improvements (Delbridge et al., 2000). However, in order to capitalize on these ideas and suggestions team members must first of all feel free to share them (Van Dun & Wilderom, 2012). Edmondson (1999) refers to this perceived freedom to share ideas and suggestions as psychological safety. Psychological safety is defined as "a shared belief that the team is safe for interpersonal risk taking" (Edmondson, 1999, p. 354) which is further elaborated on by Baer and Frese (2003) "a climate for psychological safety describes a work environment where employees are safe to speak up without being rejected or punished" (p. 50). Psychological safety is identified as a main contributor to team learning (Edmondson, 1999). Therefore it is argued that psychological safety is essential in workplace teams in Lean organizations (Van Dun & Wilderom, 2012).

Although psychological safety in workplace teams is essential for Lean organizations, team psychological safety is relevant for all organizations with a focus on team learning. Considering the increasing importance of teams in organizations (Zaccaro et al., 2001) and the existence of other team-based systems than Lean such as sociotechnical systems and off-line teams (Delbridge et al., 2000), limiting this research' focus to Lean workplace teams would undermine the relevance of psychological safety to different types of team-systems. Therefore this research is not specifically tailored to Lean teams, but the focus remains on workplace teams. In an exploratory research as this focusing on workplace teams increases the generalizability of the findings to other workplace teams. We exclude project- and management teams because these would provide serious limitations for generalizability of the findings (Shadish, Cook, & Campbell, 2001).

Current literature has operationalized psychological safety through a set of survey questions initially developed by Edmondson (1999). However, psychological safety is an emergent state which continuously develops (Kozlowski & Ilgen, 2006). Therefore the value of questionnaire results is strongly limited by time. Issuing the questionnaire on a frequent basis is also likely to reduce reliability due to history effect, attrition and self-report bias (Shadish et al., 2001). These problems may be tackled by changing the measurement method to observations. Hence, the purpose of this paper is to develop a method to reliably measure the level of team psychological safety on a frequent basis in a cost- and time-effective

manner. More specifically, we aim to develop an observation scheme with a representative list of behaviors that indicate the level of team psychological safety. Our main research question is thus formulated as follows:

> *RQ: Which behaviors that are observable with the naked eye in workplace teams are indicative of the level of team psychological safety?*

Linking observable behaviors to psychological safety poses a challenge. Psychological safety is an affective state which captures "motivational tendencies, relations among team members and affective reactions" (Kozlowski & Ilgen, 2006, p. 87). These motivational tendencies cannot be directly observed by others, but the behaviors triggering or flowing from these motivational tendencies can be observed. It is expected that by identifying variables related to psychological safety and their representative behaviors, these behaviors will in turn allow the measurement of the level of psychological safety.

Through means of a literature review we identified six variables associated with psychological safety, being leadership behavior (Halbesleben & Rathert, 2008; Hirak, Peng, Carmeli, & Schaubroeck, 2012; Walumbwa & Schaubroeck, 2009), information sharing (Gong, Cheung, Wang, & Huang, 2012; Siemsen, Roth, Balasubramanian, & Anand, 2009), high quality relationships (Carmeli et al., 2009; Carmeli & Gittell, 2009), process-, relationship-, and task conflict (Chen & Zhao, 2012; Kostopoulos & Bozionelos, 2011). Of these six variables, only four are further investigated for their relationship with psychological safety.

We excluded high-quality relationships because this stream of literature focuses on dyadic relationships within teams which, although relevant to psychological safety, are not suitable for field-observations as intended in this research. This research aims to develop an observation scheme which can be used in a team setting. Observing multiple dyadic relationships within a team will not only increase observational complexity, it also requires a more complex analysis of the observational results than an observation scheme for the team level. Considering the goal to provide a scheme which is useable for field observations, we argue that observing high-quality relationships is not suitable for the purpose of this research.

The second variable we excluded is leadership behavior. Leadership behavior is a widely researched topic, including behavioral video-observation studies (e.g. Van Der Weide, 2007). Leadership behavior focuses on one position within the team and the behavior the team leader displays which is either conducive or damaging to psychological safety. However, this research aims to observe team behavior which is indicative of the current level of psychological safety, rather than leadership behavior which indicates a possible development of psychological safety in the (near) future. In sum, we aim to observe behaviors displayed by team members that help indicate the current level of psychological safety. This is done by focusing on behaviors linked to the constructs information sharing, process-, relationship-, and task conflict. The main research question will therefore be answered by operationalizing the constructs information sharing, relationship-, task-, and process conflict into observable behaviors. This leads to the formulation of the following sub-questions.

> *Sub-question 1: How do the four variables information sharing, process-, relationship-, and task conflict relate to team psychological safety?*

Sub-question 2: Which behaviors can be observed in a workplace team when its members engage in information sharing?

Sub-question 3: Which behaviors can be observed in a workplace team when its members engage in relationship conflict?

Sub-question 4: Which behaviors can be observed in a workplace team when its members engage in task conflict?

Sub-question 5: Which behaviors can be observed in a workplace team when its members engage in process conflict?

Classifying conflict into three different types (process-, relationship- and task conflict) based on observations is challenging though it depends on the topic of conflict as well as the emotions involved. In other words, while task conflict may positively affect team psychological safety, if it entails intense emotions it may end up as a relationship conflict, which is inherently bad for team psychological safety (Jehn, Greer, Levine, & Szulanski, 2008). This emotional intensity, as a dimension of conflict, is framed into the term negative emotionality (Jehn et al., 2008). Negative emotionality is the display of anger, frustrations, jealousy, and hatred; this largely determines the effect of a conflict on team emergent states (Jehn et al., 2008). Therefore it is not only relevant to observe behaviors linked to psychological safety, but also the level negative emotionality accompanying these behaviors. Therefore we formulate sub-question six as presented below:

Sub-question 6: To what extent do negative emotions in the previously identified behaviors influence the level of psychological safety in workplace teams?

After identifying observable behaviors that represent the constructs related to psychological safety, our final goal is to determine which of the identified behaviors best indicate the level of psychological safety. In order to do this, we distinguish between meeting settings and workplace settings. Meetings provide a setting in which all team members are present and there is a high concentration of interactions (Van Der Weide, 2007). This is beneficial for observing psychological safety, because a high concentration of observations allows for quicker measurement. In addition, all team members are observed together, which is more likely to reveal a conflict than a workplace setting in which team members can evade each other. On the other hand, Pentland (2012) found that 33% of the variation in team dollar productivity can be explained by observing team-member interactions outside formal meetings. Pentland (2012) thereby implicitly suggests that meeting behavior may differ and is thus not representative for workplace behavior. Therefore, in this research, we distinguish between meeting and workplace behavior when answering the last sub-question, formulated as follows:

Sub-question 7: Which of the previously identified behaviors are most indicative of the level of team psychological safety in workplace teams?

With the answering of these sub-questions we develop an observation scheme which provides an initial indication of which behaviors allow the measurement of team psychological safety as an additional observational measure to the pre-existing self-report surveys. The knowledge developed in this research will also contribute to team effectiveness literature with indications

of desirable and undesirable team member behavior for psychological safety. The observation scheme can also function as a practical tool with which both researchers and practitioners can monitor the team level of psychological safety and steer with interventions to create an environment which can sustain continuous improvement.

Due to the exploratory nature of this research, we commence with a literature study, elaborating on the theoretical constructs briefly discussed in this section. This literature study is the basis of the methodological approach taken in this study. More specifically, it examines whether and how observing information sharing, task-, process-, and relationship conflict will aid in observing psychological safety. The actual operationalization of these theoretical constructs into observable workplace behavior will be done through a two-round Delphi study, after which the contemporary observation scheme will be tested in a field setting. The analysis following from the field testing will provide indications of which behaviors are most indicative of psychological safety, answering the main research question of this research. Using data collected during the field testing we also analyze the theoretical model upon which this research is built. This research is then concluded with a discussion, practical implications and a brief conclusion.

Theory

This research revolves around the constructs psychological safety, information sharing, and three types of conflict. Due to the complexity and interrelatedness of the factors included in the research model, the following sections in this chapter each elaborate on a different part of the research model.

Psychological Safety

Edmondson (1999) developed a widely accepted survey to measure psychological safety (e.g. Choo, Linderman, & Schroeder, 2007; Hirak et al., 2012; Siemsen et al., 2009) which collects individual team member data and is later aggregated to a team-level variable. Edmondson (1999) therefore originally developed a measure for team psychological safety. However, due to the method of data collection research has also used this survey for research on individual level data (e.g. Schulte, Cohen, & Klein, 2012; Siemsen et al., 2009). The main focus of this research will be on team psychological safety (herein after referred to as TPS). However, the individual level of psychological safety will also be considered (hereinafter referred to as IPS) in testing the theoretical model.

Psychological safety creates a condition in which team members feel that they can express their opinions (Kahn, 1990), ask advice, or admit weaknesses (Schulte et al., 2012). Furthermore, reflecting upon past mistakes, searching for root causes and subsequent solutions also increases team learning, which has indeed been found to increase team performance (Schippers et al., 2013). Schippers et al. (2013) found that teams with a poor prior performance and who subsequently have higher potential gains from team-reflection, showed increased learning during such reflections. However, to engage in team-reflection one must first feel psychologically safe. Without feeling psychologically safe in a team, team members will not voluntarily admit mistakes, provide suggestions and stand open for feedback from others (Edmondson, 1999; Schulte et al., 2012). Such reflection and openness

induces the sharing of information and knowledge, which further contributes to learning (Siemsen et al., 2009).

The expression of opinions, ideas and asking advice is influenced by the different levels of IPS within the team (Schulte et al., 2012). The higher the level of IPS, the more one feels free to express him- or herself towards team members with a similar level of IPS (Schulte et al., 2012). Team members send friendship ties to team members with similar levels of IPS. In turn, sending reciprocal friendship ties was found to further increase the level of IPS for both team members (Schulte et al., 2012). This suggests teams can constructively develop the levels of IPS of all team members, leading to a higher level of TPS, which in turn contributes to team learning. However, large differences among team members in terms of the levels of IPS may be harmful. Team members indicated to have more difficult relationships with others when their own level of psychological safety was low. In turn, the levels of IPS grew increasingly dissimilar from team members with whom they indicated to have difficult relationships (Schulte et al., 2012). When one or multiple team members have low and deviating levels of psychological safety it is expected that they will engage less in information sharing and subsequent learning. To stimulate learning on a team level rather than on the individual level, it is therefore important to ensure that within-team levels of psychological safety remain both high and similar to each other.

Limitations of Measures of Psychological Safety

Edmondson's seven-question survey measure has been used by many authors investigating the role of psychological safety at both the individual- (e.g. Carmeli et al., 2009; Carmeli & Gittell, 2009; Carmeli, Reiter-Palmon, & Ziv, 2010; Siemsen et al., 2009) and team-level of analysis (e.g. Choo et al., 2007; Edmondson, 1999; Edmondson, 2008; Hirak et al., 2012; Kostopoulos & Bozionelos, 2011). The current theoretical development of psychological safety relies solely on self-report measures, which is prone to self-report bias (Shadish et al., 2001). Donaldson and Grant-Vallone (2002) highlight the vast amount (52%) of mainstream organizational behavioral journals rely solely on self-report measures and state that this is one of the main shortcomings of organizational behavior research. They argue accurate measurement is essential for further development in this field. Donaldson and Grant-Vallone (2002) present four factors influence self-report bias. These are social desirable answering, sensitivity of the construct, dispositional characteristics of the respondent and situational characteristics. Relating these four factors specifically to the survey of psychological safety, respondents may experience pressure to give socially desirable answers when they are not fully confident of the anonymity or confidentiality of their responses or they may perceive the questions as too sensitive.

The current survey measure is also less suitable for intensive longitudinal studies and for tracking team development due to the risk of respondent attrition and learning effects (Shadish et al., 2001). For, among others, Lean organizations it is very relevant to track the development of TPS due to fluctuations over time and issuing a survey at one point in time will always provide a time-lagged rating of psychological safety. Moreover, no indication of which aspect is responsible for the high or low level of psychological safety is provided through surveys. Even though this research acknowledges the validity of the existing survey

of psychological safety, it attempts to tackle these weaknesses by developing a measure for TPS by observing team behavior.

These observations can be in the form of field-observations without the use of audio or video tools (e.g. Bales, 1950) or in the form of video observations (e.g. Van Der Weide, 2007). However, video observations are time demanding in the coding procedures and therefore do not fulfill the requirement for cost- and time-effective measurement of psychological safety. This research will thus focus on the development of an observation scheme suitable for application in field-observations.

Besides identifying the level of TPS through field observations, understanding the importance of psychological safety and knowing the corresponding desirable and undesirable behaviors may improve team learning. Hirschfeld, Jordan, Feild, Giles, and Armenakis (2006) found that team members who had good knowledge in effective teamwork processes subsequently performed better in task proficiency and constructive team processes, ultimately providing a higher team performance than teams with little knowledge about effective teamwork processes. Similarly, teams that understand the construct of psychological safety, acknowledge its importance, and know which behaviors are beneficial or detrimental to the level of TPS might engage in team processes leading to higher levels of TPS than teams unaware of the construct.

Hypothetical Research Model

We aim to observe psychological safety through the constructs information sharing, task-, process-, and relationship conflict. We propose, based on literature, that these constructs are both predictor and outcome variables of psychological safety. In short, we pose that observing these constructs will aid in observing TPS. The research model we will further investigate in this research is presented in Figure 1. Section 2.3 will elaborate upon the relationships presented in this model, together with hypotheses that will be tested in this research.

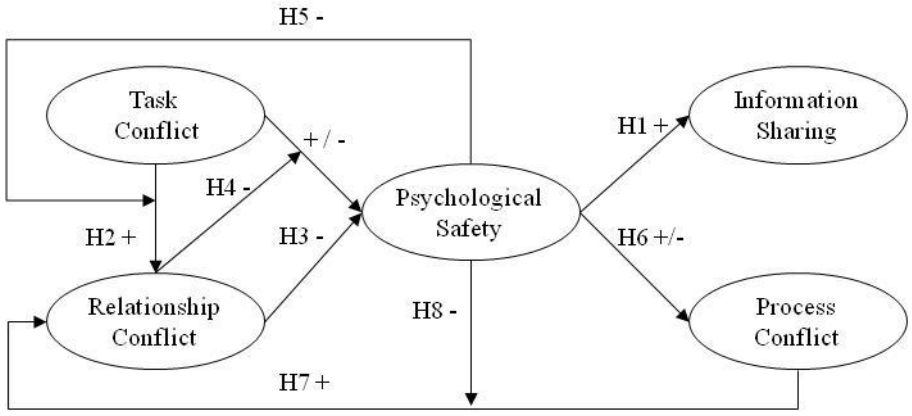


Figure 1

Hypothetical Model for Measuring Psychological Safety

Observable Outings of Psychological Safety

This section provides an elaboration of each construct and sheds light on how these constructs will aid in measuring psychological safety. It will also present the hypotheses incorporated in the hypothetical research model presented in Figure 1.

Information Sharing

As presented in the previous section, information sharing is a very broad construct and an important element of learning (Choo et al., 2007). Therefore it is difficult to elaborate on this construct as a stand-alone variable. Nonetheless it is relevant to examine this variable in relation to psychological safety, as presented in Figure 2.

The sharing of information in the context of this research is a conscious and deliberate act of sharing (Gong et al., 2012), and includes the sharing of knowledge. Throughout this research, the terms information and knowledge are used interchangeably. In all organizations information sharing plays an important role, where it varies from passing on daily production reports to sharing work instructions (Weisbord, 2004). In addition, the method of sharing information can vary greatly being through mail, phone, reports, system databases or personal conversations. Due to the many different ways to share information and the level (team-sharing or one-on-one sharing) it is too simple to state that psychological safety increases the level of information sharing. Nonetheless, there are several ways in which psychological safety does positively affect the level of information sharing. First, one can distinguish between explicit and tacit knowledge (Siemsen et al., 2009). The sharing of explicit knowledge is easy to share because they are factual and largely free from personal opinions (Siemsen et al., 2009). In contrast, tacit knowledge is more difficult to share among team members. Tacit knowledge is surrounded by much uncertainty and value laden, which means that the knowledge is not always correct (Siemsen et al., 2009). For team members to share knowledge that is potentially wrong, they must first feel safe to make a mistake, requiring IPS (Siemsen et al., 2009). Within this tacit knowledge experiences, such as past mistakes, are also included. So in order for team members to share experiences, improvement suggestions or admit mistakes in order to improve on procedures, team members must feel psychologically safe (Halbesleben & Rathert, 2008; Siemsen et al., 2009). Thus, psychological safety is a prerequisite for teams to share tacit knowledge.

However, there is no causal relationship, but rather a reinforcing reciprocal relationship. Indeed, sharing information with each other increases the level of IPS (Carmeli et al., 2009; Carmeli & Gittell, 2009). Gong et al. (2012) found that proactive employees actively engage in information sharing, which leads to higher levels of psychological safety and subsequent idea generation. Therefore it is posited that one does not only require psychological safety to overcome the barrier to share information, one can also increase the level of psychological safety by sharing information. Indeed, Carmeli and Gittell (2009) and Carmeli et al. (2009) found that sharing information with each other increases the level of IPS. Team members who hold other team members in positive regard or see similarities with others are more likely to approach and share information with them, leading to a subsequent increase in IPS (Carmeli et al., 2009; Schulte et al., 2012). Proactively approaching and sharing information with others does not only increase of own level of psychological safety (Carmeli et al., 2009; Gong et al., 2012), being approached and receiving information and knowledge conveys the perception that it is safe to engage in information sharing as well, thereby increasing the level of psychological safety (Schulte et al., 2012). However, when only several team members share information it is an indication that several team members feel psychological safe and others do not, and over time the differences in the levels of IPS will only further increase (Schulte et al., 2012). We therefore propose that observing the

sharing of information and knowledge, and especially the sharing of ideas, mistakes, solutions and experiences, indicates a high level of TPS.

Although the theory regarding these two constructs presented above implies a reciprocal relationship, we propose, in line with Siemsen et al. (2009), that psychological safety is a crucial predecessor of information sharing which, in line with Schulte et al. (2012), when present creates a mutually reinforcing mechanism. This is graphically represented in Figure 2 with the corresponding hypothesis presented below:

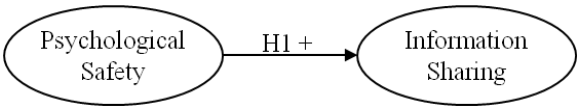


Figure 2

Theoretical Model for Psychological Safety – Information Sharing Relationship

H1: Psychological Safety has a positive effect on Information Sharing

Sharing new information and knowledge with each other may create inconsistencies in existing knowledge (Alvarez & Barney, 2007), which may trigger conflict in teams. The role of conflict in teams and its relation to psychological safety is discussed in the next section.

Conflict in Teams

Conflict is a process which results from tension between team members about real or perceived differences. In conflict "people confront issues, learn to take different perspectives, and need to be creative (…) when conflict is absent, teams might not realize that inefficiencies exist" (De Dreu & Weingart, 2003, p. 741). Conflict has a predominantly negative effect on psychological safety, but may also have a positive effect. To further understand this relationship this research distinguishes between three types of conflict in teams: relationship-, task-, and process conflict (Jehn, 1997). These three types of conflict have been consistently measured throughout literature with the intra-group conflict scale developed by Jehn (1995, 1997). Figure 3 shows the theoretical relationships between these three types of conflict and TPS.

In short, we propose that relationship conflict is inherently bad for the level of psychological safety. Building on Chen, Zhang, and Vogel (2011) we even propose that relationship conflict and psychological safety are incompatible with each other. At the same time, literature has found both positive and negative effects of task conflict on psychological safety. A growing body of literature finds that task conflict has a negative effect on team performance only when it is highly correlated with relationship conflict. Psychological safety is found to be a main moderator of the relationship- and task conflict relation. The role of process conflict is not yet understood due to a lack of research on this construct, although theory provides a basis for proposing an inverted u-shape relationship between psychological safety and process conflict (Jehn et al., 2008; Rispens, 2012).

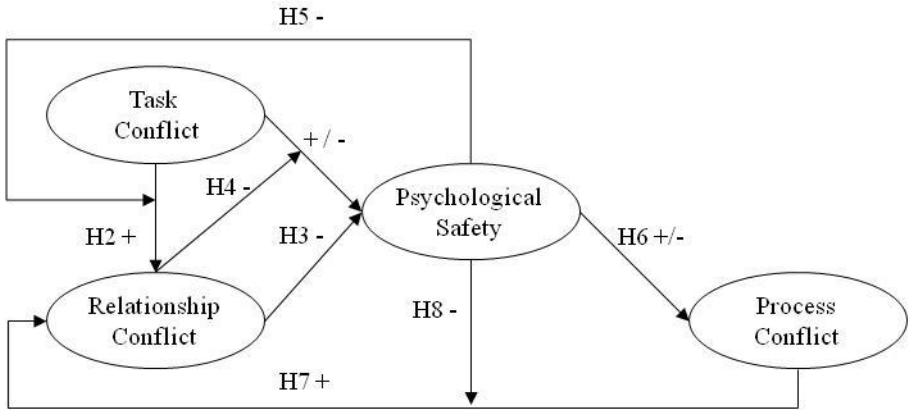


Figure 3

The Conflict-Psychological Safety Research Model

Besides distinguishing three types of conflict, Jehn (1997) identifies four conflict dimensions being negative emotion, resolution efficacy, conflict importance, and conflict norms. Jehn (1997) argues that these conflict dimensions can increase the understanding of both positive and negative effects of conflict in workgroups. These conflict dimensions are present in each conflict, be it relationship-, task-, or process conflict. Although these four dimensions can aid in a further understanding of the effect of conflict on psychological safety, only negative emotions are observable. Therefore we only incorporate the conflict dimension in this research.

In the following two sections the constructs task- and relationship conflict and their link with psychological safety are elaborated. Next the relation between these two types of conflict is further examined. This section is finalized with a brief section on process conflict.

Task Conflict.

Task conflict is defined as "disagreements among group members, concerning ideas and opinions about the task being performed, such as disagreement regarding an organization's marketing strategy current hiring strategies or the appropriate information to include in an annual report" (Jehn et al., 2008, p. 467). Conflicting ideas and non-redundant recommendations present in task conflict (thus, different perspectives) provide more value than team members who all provide similar recommendations (Hollenbeck, Colquitt, Ilgen, LePine, & Hedlund, 1998) as can be present in situations of groupthink (Schafer & Crichlow, 1996). Moreover, task conflict can be beneficial for teams when it occurs in a psychologically safe climate, as Kostopoulos and Bozionelos (2011) explain: "it provides a platform for constructive expression of different opinions, identification of mistakes, and cooperation to solve mutual problems" (p. 393)

Task conflict ultimately improves decision making and subsequent learning in teams. Boyle, Hanlon, and Russo (2012) found indications that teams who have to make a decision with no or a limited amount of task conflict and reach consensus in an early stage have a larger information bias in later stages of the decision making process than teams that maintain task conflict for a larger period of time. More concretely, team decision making improved

when initial preferences of team members were in disagreement with each other (task conflict) than when they were in agreement (Boyle et al., 2012) because such conflict encourages greater understanding of the issue being considered (De Dreu & Weingart, 2003).

Psychological safety is a prerequisite for constructive task conflict. The platform for constructive self-expressions, which is the mechanism through which task conflict benefits team learning (Kostopoulos & Bozionelos, 2011), first requires an environment where team members feel they can express themselves freely without negative retributions. Thus, constructive task conflict requires TPS (Edmondson, 1999). This explanation suggests a causal relation where psychological safety precedes task conflict. However, Chen et al. (2011) proposes the task conflict increases the level of psychological safety. The presence of task conflict "allows divergence of task-related viewpoints, which conveys a signal that it is safe to express distinctive opinions" (Chen et al., 2011, p. 1012). Chen et al. (2011) argue that the presence of task conflict, which indeed requires psychological safety, will further convey the feeling among team members that it is safe to express diverging opinions, thereby further reinforcing the level of psychological safety.

Furthermore, Bradley, Postlethwaite, Klotz, Hamdani, and Brown (2012) hypothesize that some teams avoid task conflict to maintain a harmonious and productive atmosphere. Yet, the risk of a low level of task conflict and a too harmonious team atmosphere is that it may foster groupthink (Edmondson, 1999). Groupthink is a counterproductive group state which impedes team reflection and critical discussions (Schafer & Crichlow, 1996). Groupthink negatively affects psychological safety because the team builds a pressure to maintain harmony (Edmondson, 1999), which will also lead to a subsequent decrease in task conflict. As such, the absence of task conflict can indicate groupthink and a low level of TPS. The suggestions that task conflict in teams is desirable for better decision making, learning, and performance are plentiful. However, there is also a body of literature proposing that all conflict, including task conflict, is undesirable. Two meta-analyses (De Dreu & Weingart, 2003; Simons & Peterson, 2000) found most and task conflict in teams to have a negative effect on team performance. This negative effect was strongest in cases where the correlation between relationship- and task conflict were high. When the correlation between relationship- and task conflict was weak task conflict had a less negative effect (De Dreu & Weingart, 2003) to a positive effect on team performance (Simons & Peterson, 2000). The moderator in the relationship- and task conflict correlation was found to be trust (Simons & Peterson, 2000), of which psychological safety is a main element (Edmondson, 1999).

Task conflict is therefore beneficial only when its correlation with relationship conflict is low. TPS plays a crucial role as a moderator in this correlation. When measuring TPS through relationship- and task conflict, a moderate to high task conflict with a low level of relationship conflict is expected to indicate high TPS. Understanding the relation between these two conflict types is crucial but before elaborating on this relation, relationship conflict is further explained.

Relationship Conflict.

Relationship conflict is defined as "disagreements and incompatibilities among group members regarding personal issues that are not task-related. Relationship conflicts frequently reported are about social events, gossip, clothing preferences, political views and hobbies"

(Jehn et al., 2008, p. 467). One conclusion consistently found throughout literature is that relationship conflict is detrimental to team performance, learning, emergent- and affective states and is therefore best to be avoided (e.g. De Dreu & Weingart, 2003; Jehn et al., 2008; Jehn, 1995, 1997; Rispens, 2012).

Relationship conflict has a negative impact through two mechanisms. First, relationship conflict has a negative effect on information processing (i.e. learning and information sharing) because it diverts the focus and energy from the task to focusing on each other (Rispens, 2012). As discussed earlier, information sharing has a positive effect on psychological safety. Thus, relationship conflict decreases the quality or quantity of information sharing which in turn decreases the level of psychological safety.

The second mechanism through which relationship conflict has a negative effect on psychological safety is the dislike among team members involved in relationship conflict (Chen et al., 2011). "Relationship conflict … engenders feelings such as animosity, annoyance, and irritation" (Chen et al., 2011 p. 1013). In relationship conflict team members can be distant or attacking each other and mistakes or failures can lead to resentment among team members with potential dangerous consequences (Jehn, 1995). As such, relationship conflict is by definition incompatible with psychological safety. Indeed, Chen et al. (2011) found a significant and strong negative effect of relationship conflict on psychological safety (0.59, $p<0.01$). Nonetheless, authors have also argued that psychological safety prevents relationship conflict from occurring or escalating (Bradley et al., 2012). Therefore, without implying causation, we propose that teams with a high level of psychological safety are likely to have a low level of relationship conflict.

In short, relationship conflict is detrimental for psychological safety and task conflict requires psychological safety to be beneficial in teams. Therefore it is important to understand how the two types of conflict relate to each other and how relationship conflict can be reduced while maintaining or even stimulating task conflict. The following section will elaborate on this relation.

The Interplay between Relationship- and Task Conflict.

Before further examining the relation between relationship- and task conflict the conflict dimension negative emotionality is introduced as this largely determines the impact of a conflict on emergent states, including psychological safety (Jehn et al., 2008). Negative emotions include jealousy, hatred, anger and frustration which can be present in any type of conflict and can negatively affect group processes and performance (Jehn et al., 2008). Including negative emotionality is relevant for this research because as Chen et al. (2011) state that "Relationship conflict (…) engenders feelings such as animosity, annoyance, and irritation" (p. 1013). Thus, relationship conflict is strongly laden with negative emotions. At the same time, psychological safety should enable task conflict to occur without negative emotions, weakening the correlation between task- and relationship conflict (Chen et al., 2011). Chen et al. (2011) build forth on Jehn et al. (2008) stating that negative emotionality is not present in task conflict when TPS is high. Indeed, when the level of TPS is low one can expect negative emotions to be present in task conflict leading team members to misattribute the conflict as relationship conflict (Kostopoulos & Bozionelos, 2011; Rispens, 2012). Furthermore, Rispens (2012) identified negative emotionality as a partial moderator between

task conflict and relationship conflict. However, it must be noted that negative emotions in their research (Rispens, 2012) only comprised of anger, while other literature (e.g. Jehn et al., 2008; Jehn, 1997) also consider jealousy, hatred, anxiety and frustration as an element of negative emotions. Therefore a more encompassing measurement of negative emotionality may lead to full mediation effects. Negative emotions in conflict increase the perceived intensity of the conflict (Jehn, 1997), after which the benefits of task conflict quickly diminish (De Dreu & Weingart, 2003). Moreover, high negative emotionality in conflicts may result in losing sight of the task and the focus of the conflict shifts to negative affect (Jehn, 1997). Finally, negative emotionality reduces team members' perception that the conflict can be solved (Jehn, 1997).

Current literature provides grounds to hypothesize that task conflict with a high negative emotionality has a similar negative effect on psychological safety as relationship conflict. Task conflict with high negative emotionality is strongly correlated with relationship conflict through misattribution (Jehn et al., 2008; Rispens, 2012), thus observing negative emotionality in task conflict allows for a further refinement of the observations and their impact on psychological safety. This research proposes that both the presence of relationship conflict and negative emotionality in task conflict is an indicator of low psychological safety. Therefore this section will focus on the role of psychological safety and negative emotionality in the relationship- and task conflict interplay.

Whereas we previously posited that task conflict in a psychological safe environment can be beneficial, this is not always the case. In routine task settings, task conflict is likely to evoke negative emotions (De Dreu & Weingart, 2003). In routine tasks, task conflict is expected to interfere with highly developed and effective procedures rather than improve on them (De Dreu & Weingart, 2003). Furthermore, task conflict in routine tasks will elicit negative emotions without resulting in additional learning (Chen et al., 2011). Non-routine tasks contain more task ambiguity, which increases the mutual acknowledgement that team members can benefit from each other's knowledge (Tidd, McIntyre, & Friedman, 2004). When team members perceive task issues to threaten performance "first priority will be given to solving the problem that threatens the team's performance instead of spending time and energy evaluating intra-team relationships and finding out who said why, when, and how to whom" (Rispens, 2012, p. 352). In important task issues team members will resort less to blaming, and team members are less likely to consider blaming by another team member as a personal attack (Rispens, 2012). Team members should no longer consider questioning or challenges as disrespectful (decreased misattribution and negative emotionality), which is supported by the finding that in important conflict issues the relationship between task- and relationship conflict was found to be non-significant (Rispens, 2012).

In less important task issues team members are more likely to misattribute blaming or other negative emotions as a personal attack or lack of respect, and as such perceive to be engaged in relationship conflict rather than task conflict whereas high levels of respect increase feelings of belonging to the team and willingness to work together (Rispens, 2012). In a routine setting procedures and tasks are often standardized, and the probability that task issues are a real threat to team performance are lower than in non-routine task environments, leading team members to consider these issues as less important. As such, team members cannot benefit as much from exchanging views to arrive at the best decision possible. Thus,

task issues in routine settings are perceived to be less threatening to team performance than in non-routine settings, which increases the probability that team members misattribute the task conflict following from these issues as relationship conflict (Rispens, 2012).

The finding that task conflict in routine task settings is undesirable may seem troublesome for task conflict in Lean. After all, Lean strives for standardization (Liker & Franz, 2011). However, Lean differentiates itself from traditional mass-production methods based on the principles of Taylorism (Weisbord, 2004) where Lean strives for continuous bottom-up improvement and thereby encourages problem identification and improvement potentials (Liker & Franz, 2011). For Lean to be successful task conflict must be accepted without team members misattributing this conflict as relationship conflict. Therefore successful Lean teams require a high level of psychological safety which can be identified through the presence of task conflict with low negative emotionality and a low level of relationship conflict. Having shed light on the constructs task- and relationship conflict and their relation to psychological safety, we present our hypothesized model for psychological safety, task-, and relationship conflict in Figure 4. Below we specify the hypotheses we aim to test in through this model.

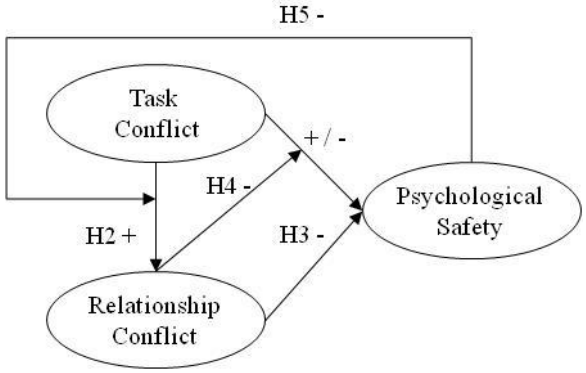


Figure 4

Hypothesized Model for Psychological Safety, Task-, and Relationship Conflict

Based on the conflict theory presented thus far in this chapter, we hypothesize the following:

H2: Task conflict has a positive effect on relationship conflict

H3: Relationship conflict has a negative effect on psychological safety

H4: Controlling for relationship conflict, task conflict has a positive effect on psychological safety

H5: Psychological safety moderates the effect of task conflict on relationship conflict

Process Conflict.

Process conflicts are "disagreements about logistical and delegation issues such as how task accomplishment should proceed in the work unit, who's responsible for what and how things should be delegated" (Jehn et al., 2008, p. 467). The construct of process conflict has first been introduced by Jehn (1997). Previous literature only distinguished between task and relationship conflict (e.g. Jehn, 1995). Earlier, Shah and Jehn (1993) have framed this type of

conflict as administrative conflict, though the construct was not further theoretically developed afterwards. Although Jehn et al. (2008) argue that process conflict is conceptually different from task conflict, this distinction is not consistently made in other literature (e.g. De Dreu & Weingart, 2003; Simons & Peterson, 2000). In other literature, process conflict has implicitly been included in the construct of task conflict. A plausible explanation for this is that the distinction between process and task conflict is much less clear than the distinction between task and relationship conflict. Since task- and process conflicts are both work-related constructs, the distinction is more difficult to make. For example, when a team discusses how a specific task should be executed they engage in task conflict, the moment the team shifts to the delegation of this execution the team engages in process conflict. As a consequence, there is a research gap wherein the role of process conflict in teams is underdeveloped. Due to the lack of current literature there is little understanding of the effect of process conflict on emergent states as psychological safety. Despite this lack of theory, process conflict is included in this exploratory research in an attempt to expand on the current understanding of process conflict.

We propose that psychological safety has an inverted u-shape relationship with process conflict. If psychological safety encourages team members to speak up we propose that high psychological safety will encourage team members to point others towards their responsibilities within the team. Therefore, a high level of psychological safety should lead to moderate levels of process conflict. However, when process conflict becomes too intense it will turn to blaming, after which process conflict will assume the same properties as relationship conflict (Rispens, 2012). Thus our proposition includes a delicate balance between process conflict and psychological safety. On the one hand psychological safety encourages process conflict, while a high level of process conflict is detrimental for the level of psychological safety because it triggers relationship conflict. This proposition is in line with the proposition of Jehn (1997), who stated that a moderate to low level of process conflict is desirable in teams. Building theory on the role of process conflict in teams and its relationship with psychological safety can further guide practitioners in which conflicts teams may engage and which conflicts should be discouraged to increase team learning and subsequent team performance. With the aim of further developing the understanding of process conflict in teams, we aim to test process conflict as presented in the theoretical model in Figure 5. The corresponding hypotheses are presented below.

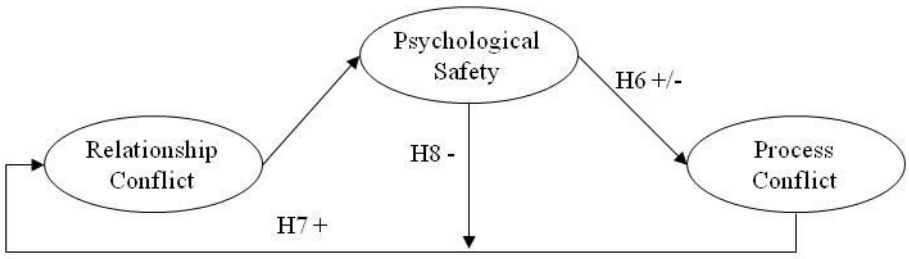


Figure 5

Hypothesized Model for Psychological Safety, Process-, and Relationship Conflict

In line with the hypothesized model, we propose the following additional hypotheses:

H6: Psychological safety has a positive effect on process conflict

H7: Process conflict has a positive effect on relationship conflict

H8: Psychological safety moderates the relationship between process- and relationship conflict

Summarizing this section of process conflict, we propose that psychological safety stimulates process conflict up to a moderate level and meanwhile prevents this process conflict from triggering relationship conflict. Too much process conflict may escalate into relationship conflict which decreases psychological safety. Therefore we propose an inverted u-shape relationship between psychological safety and process conflict. In the absence of psychological safety, even moderate levels of process conflict trigger relationship conflict. In the next chapter we elaborate upon the Delphi study we conducted to obtain behaviors used in the observation scheme, which is tested in chapter four.

Study 1: Delphi Method

Study 1 consisted of a two-round Delphi method preceded by a pilot. The two-round Delphi method suits the purpose of this research because the first round allows the qualitative collection of a broad array of behaviors from multiple respondents. The second round allows for a quantitative cross-checking by other respondents, which is designed to obtain consensus by the respondents. No more than two rounds were used because literature has found significant decreases in response rate after the second round (Keeney, Hasson, & McKenna, 2006). To increase the quality of the data collected through these two Delphi rounds the first Delphi round was preceded by a pilot version. This chapter is subdivided into two sections, the first section elaborates on the sample, methodology and results of the pilot and the first Delphi round, and the second section does the same for the second Delphi round. The data gathered during Study 1 are used to develop the first version of the observation scheme.

First Delphi Round

The first Delphi round was designed to obtain a wide selection of behaviors which indicate the presence of relationship-, task-, process conflict and information sharing. The sample, procedure and subsequent analysis of both the pilot and the first Delphi round is elaborated in this section.

Sample

The first Delphi round was pre-tested by two consultants of a small sized consultancy firm specialized in behavior and leadership in the workplace. There was one male respondent and one female respondent, with ten and six years of experience with behavior in the workplace respectively.

For the first Delphi round all consultants (N = 40) of the same consultancy firm were invited. These consultants were selected because they can provide an expert opinion based on multiple different workplace settings they have worked and currently work in. Due to the diverse set of customers and the independent nature of the work the consultants are active in,

it is not expected that respondents are biased by working in the same firm. Consultants were invited through both e-mails and face-to-face conversations.

Ten consultants participated in the first data collection round, of which two deviated from the regular procedure by participating in an interview. This represents a response rate of 25%. In addition one author collected data by attending a team meeting at one of the projects of the consultancy firm, increasing the total amount of respondents to eleven.

Including the participating author, 54% of the respondents were male and 45% were female. The average age was 33, with a range from 22 years to 47 years. All participants had enjoyed an academic education. The teams in which the behavior was observed consisted of four project teams, two management teams and three workplace teams. Therefore it is argued that the collected behaviors consist of a broad range of behaviors.

Procedure Pilot Delphi Round

The pilot version of the Delphi round was designed as a retrospective online survey, where respondents were asked to identify behaviors that occurred in a pre-defined situation on the workplace in one of their previous projects. Each pre-defined situation represented the definition of one of the three types of conflict and information sharing. This pilot version is presented in Appendix I.

Before issuing this version to the entire sample, two consultants were asked to fill in this version. Both participants were then requested to provide feedback, in which three main issues were identified. First, specifying previously observed behavior was found to be too difficult and induced guessing behaviors by the authors. Due to a lack of direction in the questions responses can be about all behavior observed in a work-setting. This issue was solved by asking respondents to actively observe relevant behaviors in the workplace and respond to the questions afterwards. Secondly, the use of the word “conflict” evokes rather strong emotional associations, which is not in line with the theoretical definition of the construct. Finally, providing pre-defined behaviors from other literature would aid the respondents in assessing the relevance of the provided behaviors in the different constructs.

Procedure Delphi Round 1

Based on the feedback received from the pilot version three changes were incorporated into the first round of the Delphi method compared to the procedure of the pilot Delphi round in order to increase both the response rate and the quality of the responses. First, respondents were encouraged to read the definition of the constructs together with several hypothetical examples and pay attention to which behaviors can be observed during a situation representing the provided construct definition. To obtain both positive as negative behaviors the definitions are also reversed. This means that participants are requested to analyze behavior in eight situations. Secondly, respondents are provided a (paper) form which they are free to use when perceived as convenient. On this form respondents can fill in their observations in a manner they deem appropriate. This approach encourages respondents to report their observations in a way they can best present it, with the goal of increasing the quality of their observations. Finally, the word conflict has not been presented as prominent as in the first versions of the questionnaire. In the form to be filled in the terms relationship-, task-, and process conflict have been modified to include the words discussions and

disagreements. This better represents the broad array of emotional context provided by the definitions of conflict which is in line with the definition of conflict by Jehn (1997) and Jehn et al. (2008).

One point of feedback was not incorporated into the first Delphi round. This was providing a pre-defined list of behaviors in the survey to help respondents on their way. Such an approach may discourage respondents to provide more behaviors than already presented in the questionnaire. In addition, it can steer the direction of which type of behaviors to observe. By encouraging respondents to observe behaviors without a limiting list of behaviors a more diverse set of responses is encouraged. The first version of the Delphi round wherein the feedback has been incorporated is presented in Appendix II.

Data Analysis

Data from the first Delphi round was collected over a period of two and a half weeks. The behaviors collected during the first Delphi round were first listed together, with their classification as provided by each respondent (relationship conflict, task conflict, process conflict and information sharing or unclassified). This provided a list of 280 behaviors, retrieved from nine filled in observation schemes and an interview with two consultants. These observation schemes and the behaviors collected during the interview are presented in Appendix III. The next goal was to reduce these behaviors into a list of about 50 behaviors to make it suitable for a second Delphi round. Table 1 presents the analysis procedure of the first Delphi round, which is elaborated afterwards.

Table 1

Analysis Procedure of Delphi Round 1

Step	Conducted activity	Resulting Behaviors
1	Primary data collection	280
2	Aggregate duplicates and remove non-behaviors	73
3	Second aggregation round & mutually-exclusiveness check	65
4	Repetition previous step and check for too general behaviors	53

After the data collection, the first approach taken was to aggregate duplicate behaviors and critically assess whether the behaviors are actually observable. This resulted into a list of 73 different behaviors counted 253 times (27 non-observable behaviors were discarded). The resulting list was then critically re-examined by the two authors together. Here the process was similar to the second step, assessing whether the reported behaviors are actually behaviors and whether they are observable. In addition, overlaps with other behaviors were assessed to determine whether the behaviors could be aggregated or whether they are mutually exclusive.

In order to further reduce the amount of behaviors to the target of 50 to be suitable for a second Delphi round, a third evaluation round was conducted with an additional analysis to ensure the behaviors were not too general and ensure mutual exclusiveness.

Results

Through the first round of analysis, the 280 behaviors collected in the first Delphi round were reduced to 73 behaviors, counted 253 times (27 non-observable behaviors were discarded). The second round of analysis (step 3) led to the elimination and aggregation of eight behaviors, leaving a total of 65 behaviors. The final round of analysis further reduced the amount of behaviors to 53 in which, besides a repetition of the previous steps, too general behaviors were eliminated. An example of a too general behavior eliminated in this round was "During a conflict in a meeting team members intervene". This can be interpreted in different ways, varying from keeping problems quiet to actually managing the conflict and address the underlying issue. Thus there are different forms of intervening, while each may have a different impact on the level of psychological safety in a team. The remaining 53 behaviors are the product of combining and summarizing 213 of the 280 collected behaviors. These 53 behaviors are included into the second Delphi round.

The procedure of Delphi round 1 was designed to obtain behaviors representing the constructs information sharing or a type of conflict. However, after aggregating them to the final list of 53 behaviors, most of the resulting behaviors appeared to fit, conceptually, in several of the four constructs. This overlap was expected as literature has identified high correlations between relationship and task conflict (De Dreu & Weingart, 2003; Simons & Peterson, 2000). The final list of 53 behaviors with a corresponding frequency count (total of 213) and the 67 eliminated behaviors are presented in Appendix IV.

Second Delphi Round

The remaining list of 53 behaviors from the first Delphi round was used as input for the second Delphi round. A vast majority of these 53 behaviors were not clearly an element of one specific category. Therefore this round aimed to determine the most relevant category for each behavior, thus a second attempt to classify behaviors to one of the four constructs. In addition, verification took place on whether the behaviors provided in the first round are actually observable, and the frequency in which they are found in the workplace. The sample, procedure and analysis of the results are presented below.

Sample

For the second Delphi round all 40 consultants of the consultancy firm were invited to participate through e-mail invitations and a personal approach. Due to the online questioning and pre-determined behaviors all consultants were expected to be able to answer this questionnaire. In addition, 50 internal Lean or change managers in other companies were invited to participate in the questionnaire to increase the diversity of expert respondents. These internal Lean or change managers were invited by consultants who were currently or previously working together with them on a project.

The main requirement for inviting these internal lean or change managers was that the respondent engaged, advised or supervised multiple workplace teams. This requirement is

relevant because managers who only supervise one team may respond to behavior in their team, rather than general workplace behavior.

This round yielded 24 completed questionnaires, representing a response rate of 27%. This included six respondents from outside the consultancy firm and 18 responses from within the consultancy firm. There were 12 men and 12 women who responded, with an average age of 38. Their ages ranged from 26 to 63 years. 88% of the respondents achieved a Master degree, 8% a Bachelor degree and the remaining 4% completed a vocational study. The respondent with a vocational study may be lower educated than the other participants, but with 29 years of experience with behavior in the workplace this participant has significantly more experience than the average, which is 13 years. The average experience with behavior in the workplace is 10 years, ranging from 2 to 35 years and a standard deviation of 7.5 years. 79% of the respondents are active in the consulting sector, 4% in the financial sector, and 17% in the public sector. It can therefore be said that this sample contains a broad range of experience, age, and consultants who gained experience from multiple different working situations.

Procedure

The second Delphi round was an online questionnaire. The main purpose of this second round was to reduce the amount of 53 behaviors to a testable amount of behaviors. A literature search for previously developed field observation schemes provided a broad range of both field observations and video observations, each with a different amount of observation codes. The findings are presented in Table 2.

The field observations presented in Table 2 do not contain more than 13 behaviors, whereas the video observations seem to be more suitable for larger amounts of codes. Considering the exploratory nature of this research, we propose that for this research a practical field observation scheme should contain no more than twenty behaviors, where about 15 behaviors seems desirable. In addition, observers must be able to quickly determine which behavior is observed and located on the scheme, which advocates for a limited amount of behaviors. Rather than reducing the amount of behaviors directly to 15 or 20 through this Delphi round, we aim to reduce the amount of behaviors to a maximum of 30. This allows a more elaborate testing of the observation scheme in the field, after which empirical evidence can be used to further reduce the amount of behaviors in the scheme to a maximum of 20. Reducing the amount of behaviors to thirty provides a testable range because it is the maximum amount of behaviors that fits on one page, although it is still too elaborate for daily practice. Going beyond a one-page scheme will increase complexity, with a subsequent larger risk of missing behaviors.

Table 2

Comparison Between Coding Procedures and Codes

Author	Type of Observation	Amount of Codes
Zijlstra, Waller, and Phillips (2012)	Video Observations	10
Fellers and Saudargas (1987)	Field Observations	11
Abikoff, Gittelman, and Klein (1980)	Field Observations	12
Bales (1950)	Field Observations	12
Reynolds and Kamphaus (2004)	Field Observations	13
Van Der Weide (2007)	Video Observations	19
Karn and Cowling (2008)	Video & Field notes	27

This second Delphi round round was designed to obtain consensus on which behaviors are most indicative of the level of psychological safety. This was to be achieved by gathering data on the following items:

- The degree to which the behavior indicates relationship conflict
- The degree to which the behavior indicates task- and process conflict
- The degree to which the behavior indicates information sharing
- The degree to which the behavior is present in the workplace (frequency)
- The degree to which the behavior is observable with the naked eye

These five items were translated into five questions with a five-point semantic scale, ranging from "not at all" to "completely". The use of a semantic scale is expected to provide respondents a better understanding of the scale than a 5-point Likert scale (Roersen, Kraaijenbrink, & Groen, in press). An example question was "this behavior has an influence on RELATIONS". This way of questioning provides both a relevance to the category as an indication of its impact on each category. The items were formulated in a neutral setting (e.g. "has an influence on relations" rather than "indicates relationship conflict"); to include both positively and negatively related behaviors to each construct. For example, shaking hands and shouting can both have an influence on relationships. At the beginning of the questionnaire each construct was defined to ensure that all respondents used the same definition. To increase clarity all behaviors contained the same questions in the same order.

Before issuing the questionnaire the method of questioning and definitions were first presented to one consultant who provided feedback. This only led to minor presentation and grammatical adjustments. Two other consultants provided advice on the duration of the questionnaire, which should take no more than 10-15 minutes to fill in to ensure a sufficiently high response rate. We thus decided to split the 53 behaviors and developed two versions. Version A consisted of 27 questions and version B of 26 questions. Through a random number generator (Haahr & Haahr, 2012) the 53 behaviors were randomly assigned to each version of the questionnaire and in a random sequence, and respondents were directed to

either version A or B of the questionnaire based on an even or uneven birth year. This ensured a more or less equal response rate for each version. The questions and answers of the second Delphi round can be found in Appendix V.

Data Analysis

We yielded 12 fully-completed questionnaires for each version. Individual responses were aggregated into an average with which the further analysis is conducted. Appendix V presents the survey questions, its results, averaged results, and the SD.

As a first step in selecting behaviors that best represent a level of psychological safety, the impact on one of the three categories (relations, tasks and processes or information sharing) is most relevant. Therefore, all behaviors with a moderate to low impact (score lower than 4 on a 5-point scale) on all three categories were eliminated from the list. The next step was to remove all behaviors that were considered non-observable (score of 3 or lower). In order to observe behaviors, they must also be present on the work floor. Therefore behaviors that rarely occur (score 3 or lower) on the workplace were removed from the list. All remaining behaviors are rated as being high-impact, observable, and present on the workplace. We then re-assessed all remaining and previously eliminated behaviors for face-validity. Finally, behaviors were checked for being mutually exclusive and whether they can be interpreted in multiple ways.

Results

This second Delphi round commenced with 53 behaviors. 10 behaviors were eliminated in the first analysis round, where all non-high impact behaviors were removed. 3 non-observable behaviors and 4 behaviors which are not present on the work floor are subsequently eliminated from the list, leaving 36 behaviors. Checking for face validity, we removed the following items for not being behavior:

- Team members do not talk about personal things with each other
- Team members have different working procedures and do not compare them
- Team members make discussions about responsibilities personal
- Team members follow and hold on to procedures or previously made decisions
- Team members do not directly share their opinion
- During a meeting only the team leader talks or only one agenda point is attended to

Furthermore, the behavior “team members have informal breaks together (such as smoking, lunch or coffee)” was eliminated from the scheme. This behavior was rated as having a high impact on relationships (score of 4.25), but it is expected that the interactions between team members during such breaks are more relevant. This could be gossiping about team members who did not join in the break (presumably indicating relationship conflict) or sharing private experiences (presumably indicating the absence of relationship conflict). Therefore this behavior was eliminated from the observation scheme.

Controlling for mutually exclusiveness, we aggregated the behaviors “team members display signs of aggression or anger in their voice” and “team members display signs of aggression or anger in their body language” into “team members display signs of aggression or anger”, which includes both verbal and non-verbal signs. The behaviors “in meetings a few team members talk intensively while the rest does not participate” and “the loudest

talkers receive the most attention" are not mutually exclusive, and therefore the behavior "in meetings a few team members talk intensively while the rest does not participate" was deleted. Two of the previously deleted behaviors were included into the observation scheme. These are "team members ask each other open questions" and "active listening". Both behaviors have a high impact on information sharing (4.21 and 4.28 respectively), but was initially removed from the list because it rarely occurs in workplace teams (both score 2.9). Information sharing positively influences psychological safety (Siemsen et al., 2009); therefore measuring the presence of active listening is expected to increase the reliability of the scheme.

Having performed this analysis, 29 behaviors remained. The behaviors have been divided into three categories (relationships, tasks and processes, and information sharing) based on their highest impact score as rated by experts in the second Delphi round. However, from the respondents' point of view several behaviors have a high impact on multiple constructs. Of the 29 behaviors only 16 were classified as having a high impact on only one construct. 4 behaviors have a high impact on all three constructs and 9 behaviors on two constructs. The overlap of behaviors over multiple constructs was previously identified in Delphi round 1, and reconfirmed in this second round. The 29 behaviors are presented as an observation scheme in Appendix VI. These behaviors are used as input for the field observations of Study 2.

Study 2: Field Observations

The observation scheme developed in Study 1 is tested in this chapter. Through an exploratory observational field study we attempt to identify which previously identified behaviors best indicate the level of TPS. To increase the quality and reliability of the field observations a pilot observation was conducted. The sampling, design and data analysis are described below.

Sample

For the pilot observations a team in a small sized consultancy firm was observed consisting of 3 men and 5 women, with an average age of 35. All team members have enjoyed an academic education and have been on this team for an average of 1.4 years. This is a non-workplace team, thus does not directly contribute to the data collection as it is not generalizable to workplace teams. However, it suits the purpose of testing the usability of the observation scheme and identifying issues with the observation scheme before the larger-scale data analysis commences. The team consisted of ten team members, of which seven were present during the observed meeting which lasted 45 minutes.

Teams were invited through the use of the network of the consultancy firm in past-, current-, or potential projects and were offered feedback on both the observational- and survey results at the team level. The testing of the observation scheme took place in ten Dutch workplace teams: seven in a company in the financial sector and three in a Dutch semi-public industrial service organization. Using the observation scheme, 139 team members were observed, of which 129 filled in the questionnaire, representing a response rate of 93%. The main difference between the educational levels of the two organizations (see Table 3) lies in a

high amount of middle-vocational educated employees in the industrial service organization (87.3%), whereas the teams of the financial organization consist mainly of higher- and academic educated employees (59.7%).

Table 3

Educational Background of Team Members in Both Organizations

	Financial Organization		**Industrial Maintenance Organization**		**Total**	
Education	Count	%	Count	%	Count	%
High-school	3	4.2%	1	1.8%	4	3.1%
Lower Vocational	0	0%	4	7.3%	4	3.1%
Middle Vocational	26	36.1%	48	87.3%	74	58.3%
Higher Vocational	33	45.8%	2	3.6%	35	27.6%
Academic Education	10	13.9%	0	0%	10	7.9%
Total	72	100%	55	100%	127	100%

Team size ranged from eight to twenty-two team members, with an average of 14 members per team. As presented in Table 4, the teams from the industrial service organization (teams 8 – 10) are larger, and in contrast to the financial sector organization (teams 1 – 7) fully composed of men. Another main difference between the two organizations is the average time team members have been in their current team. The industrial service organization was reorganized six years ago and the financial organization underwent big changes a year ago. This affected most teams, resulting in relatively newly composed teams.

Table 4

Team Compositions

			Gender Composition		
Team	**Team Size**	**Average Age**	**Male**	**Female**	**Years in Team**
1	9	40	44%	56%	0.8
2	8	36	13%	88%	0.6
3	9	32	44%	56%	0.9
4	12	47	50%	50%	0.7
5	18	32	17%	83%	1.6
6	10	31	10%	90%	0.4
7	8	38	75%	25%	1.1
8	19	31	100%	0%	3.8
9	14	37	100%	0%	3.5
10	22	38	100%	0%	4.3
Average	13	36	55%	45%	1.8

Pilot Study

The design of the pilot field observation consists of three stages. First, the observation scheme is refined after which an observation procedure is developed. Finally, a questionnaire is developed to compare observational findings with survey responses.

Measures

The field observations consist of two different measures, being the observation scheme and a survey to be issued among the observed team members. The two measures are discussed separately in this section.

Survey.

In Study 1, behaviors were classified as behaviors representing information sharing, relationship-, task-, and process conflict. In order to relate the observed behaviors to these constructs, corresponding survey questions were issued among team members after the observation. In addition, translated survey questions for measuring psychological safety are included. Except for the survey questions for information sharing, the original English survey questions were translated to Dutch by Overbeek (2012). These Dutch survey questions were previously issued among a sample of 431 team members and the questions were found reliable ($\alpha > 0.70$). Psychological safety was measured using 5 questions from Edmondson

(1999), a sample question is “No one on this team would deliberately act in a way that undermines my efforts”. Task- and relationship conflict were measured using the intragroup conflict scale by Jehn (1995). A sample question for relationship conflict (total of 4 questions) is “How much friction is there among members in your work unit?” and for task conflict (total of 5 questions) is “How frequently are there conflicts about ideas in your work unit?” Process conflict (5 questions) was measured using the survey questions developed by Shah and Jehn (1993). A sample question for process conflict is “How much disagreement was there about procedures in your work group?” Information sharing was measured using eight questions by Van Dun, Wilderom, and Hoogeboom (2013). All questions were answered with a 7-point semantic Likert scale.

The survey concluded with several demographic questions, including the duration of the team membership, time employed within the current organization and in the current position. Respondents were also asked to indicate on a 7-point Likert scale the degree to which their behavior is influenced by the observation and whether the observed period is representative for the team. The survey is presented in Appendix VII.

Observation Scheme.

The initial 29 behaviors remaining after Study 1 were originally formulated as descriptive sentences. To increase the user friendliness during observation the behaviors are reduced in size with the goal of providing short and self-explanatory behaviors such as in the scheme of Van Der Weide (2007). An example is the initial behavior “team members listen actively to each other”, which is rephrased to “active listening”. Where behaviors are deemed to be insufficiently self-explanatory an example or short definition is provided in brackets. These measures serve a faster identification of identified behavior on the scheme, thus decreasing the amount of missed behaviors due to searching for the right behavior in the scheme.

In order to further increase the usability of the scheme, behaviors were categorized into six subcategories: 1)good environment, 2)defensive or evasive behavior, 3)responsibility, 4)feedback, 5)knowledge sharing and work procedures, and 6)extra behavior present in meetings. As in the observation scheme presented by Bales (1950), the theoretical behavioral categories need not to be included in the observation scheme. Following this guideline the observation scheme does not include classifications such as relationship conflict or information sharing. Instead, the scheme is classified into six categories each bundling similar types of behaviors in order to aid the observer in quickly identifying which behavior is observed and where it is written. In addition, behaviors were not found to relate to only one construct, thus using the constructs as guideline for the observation scheme structure may have been confusing.

The now categories aid the observer as he/she now only needs to determine the relevant category and find the behavior in a list of no more than eight behaviors. In addition, all behaviors are presented on one page. The 29 behaviors in the observation scheme are presented in Table 5, for the used observation scheme, see Appendix VI. For an elaborate definition of the behaviors presented in Table 5, see Appendix VIII.

Table 5

Team Behavior Observation Scheme

Team Behaviors
Good Environment
1. Relaxed behavior *(make jokes, whistle, singing)*
2. Personal attention *(talk about personal, non-work related matters)*
3. Enthusiasm *(greet, compliment)*
4. Agree *(say yes, nod)*
Defensive or Evasive Behavior
5. Aggression *(raise voice, large gestures)*
6. Closed body posture *(arms closed over each other, lean backwards)*
7. Evade confrontation *(do not react to addressed problems or confrontations)*
8. Resistance against task *(react negatively towards the execution of a task)*
Responsibility
9. Point towards responsibility
10. Give fault to others *(blame others as the source for own failure)*
11. Deny fault *(deny any shortcoming of the alleged)*
12. Fail to meet or delay previous agreements *(take responsibility and acknowledge own fault)*
Feedback
13. Active listening *(verify, confirm, paraphrase, etc.)*
14. Interrupting
15. Provide or ask feedback
16. Do not make eye-contact during feedback
17. Joke about disagreements *(about previous feedback, procedures or issues)*
18. React cold to enthusiasm
Knowledge Sharing and Work Procedures
19. Ask open questions
20. Ask or offer help
21. Brief consultation
22. Look for improvement opportunities *(address own work method, look for solutions together)*
23. Discuss and compare results
24. Share procedures, knowledge and experiences
25. Negatively react towards ideas *(ideas or opinions of other team members)*
26. Re-divide Tasks *(of routine or previously divided tasks)*
Extra Behavior Present in Meetings
27. Not present or unprepared at the meeting *(come late, read or work during meeting)*
28. Chatting or signing in sub-groups
29. Give the same people the attention *(with every new agenda topic)*

Procedure

To ensure that all observations are comparable with each other, observers followed the same procedures (for the procedure, see Appendix VIII). This procedure provides all definitions of the behaviors, required preparations before the observations and the measurement procedure. All behaviors are turfed, measuring the frequency of the behaviors. However, to incorporate the impact of negative emotions (Jehn, 1997) during conflict, a subjective rating is included into the measurement. Negative emotionality is a conflict dimension, containing feelings of anger, jealousy, hatred and frustration (Jehn, 1997). It is hypothesized that behaviors can be laden with a degree of negative emotionality. Ideally, each behavior would be rated on a negative emotionality 5-point Likert scale. However, this would make the observation scheme too complex for practical use. Therefore we chose to only register cases of extreme negative emotionality. When observers experience behavior to contain "extreme negative emotions", this behavior is turfed as a "2". Extreme negative emotionality is present when the observer perceives a behavior to be laden with such levels of anger, jealousy, hatred or frustration that he or she expects it to have a significant effect on the level of TPS.

Each behavior rated as extreme negative emotionality requires an explanation of the observed behavior in the notes section on the observation scheme. This provides both additional context and data which might aid in explaining the level of psychological safety meanwhile preventing unwarranted registrations of negative emotionality.

Analysis of the Pilot Field Observation

As the pilot consisted of only one team, no data analysis took place. However, the experience with the observation scheme and the procedure confirmed previous expectations and identified several shortcomings. First of all, it takes a large effort to quickly find and locate the right behaviors in the observation scheme. The pilot observation was conducted by one of the authors which means that the complexity for other users of the scheme is most likely to be higher. For the testing of this observation scheme such complexity may be acceptable, but the need to reduce the amount of behaviors is further established.

A second issue arose in relation to the moment to commence the observation. Before the official opening of the meeting there was a high amount of informal communication, which is valuable for teams (Pentland, 2012) and can contain behaviors indicative of the level of psychological safety. However, including behaviors before the official opening of the meeting decreases the comparability between teams due to randomness. In this pilot, team members were waiting for others and were therefore talking together. In other situations the team may be waiting at the coffee machine before going to the meeting room. To maintain consistency in the observation procedure, observations commence after the official opening.

Finally, the questionnaire was issued among the present team members. No concerns were expressed by respondents, indicating that the questionnaire is understandable. In short, this pilot observation led to a minor modification in the observation procedure and the need to further reduce the amount of behaviors for practical use is further established. The final version of the observation procedure is presented in Appendix VIII.

Main Field Observations

The pilot observation discussed in chapter 4.2 led to minor improvements which are presented in section 4.2.3. In short, both the survey measures and the observation scheme remain unchanged. The observation procedure is further specified as to the moment at which the observation in a meeting setting commences. This section further elaborates on the specific observation settings to be used in the main field observations. To determine the circumstances in which to test the observation scheme, data collection methods of other authors were reviewed. A vast majority of papers previously consulted in this research made use of surveys and personal interviews. Including a search on Web of Science provided a brief overview of observation techniques used by other authors presented in Table 6.

Table 6

Comparison of Different Observational Procedures and Durations

Author	Type of Observation	Duration
Shah and Jehn (1993)	Audiotapes	30 min. decision making tasks and 20 min. motor tasks
Delbridge (1995)	Field observation	4 weeks
Jehn (1997)	Field observation	4 hours per day, 1-2 days per week, 3-6 months
Edmondson (1999)	8 team meetings	1-3 hours each
Rothenberg (2003)	Field observation	4 weeks
Chang, Bordia, and Duck (2003)	Laboratory setting	40 min.
Hirschfeld et al. (2006)	Field observation	41 hours in 2 weeks
Jehn et al. (2008)	Video observation	3 hours
Lingard et al. (2012)	Field observation	5 teams, 1-3 hour blocks, 3-6 weeks. Total of 139 hours.
Paletz, Schunn, and Kim (2013)	Video observation	11 hours

Before determining which method best suites this study, the practical application and theoretical aspects of the observation scheme are considered. From a practical point of view the observation scheme is to be used by, among others, consultants. Whether experts such as consultants or team leaders will use the observation scheme as practical tool depends on its perceived added value, user-friendliness and the time investment required to understand, use and analyze the results of the tool. This requires an observation scheme which can indicate the level of psychological in a relatively short time span and can be used after a short introduction and explanation of the scheme.

The theoretical requirements are two-folded. First, to determine team psychological safety in the workplace, an observation setting in the workplace is more relevant. However, in

workplaces with low task interdependence or geographical dispersion the concentration of interactions is expected to be lower. This would require relatively extensive period of observations, similar to the observation method of (Jehn, 1997). On the other hand, psychological safety is an emergent state (Kozlowski & Ilgen, 2006) which is dynamic by nature. Where the observations of Jehn (1997) cover a timespan of three to six months, the level of psychological safety may have endured several peaks and dips, along with expected fluctuations in behavior. These fluctuations may decrease the reliability of the findings as they do not correspond with the level of TPS measured at the end of the observation period.

The ideal time span for observing is as far as known not provided by literature. It must be long enough to observe multiple interactions and differences between different team members as team psychological safety stems from the average level of psychological safety of each individual team member. On the other hand it should not take as long that it covers multiple dips or peaks of the level of psychological safety as this can hide underlying issues. Therefore it is expected that observations should cover at least one hour of observation, similar to the methodology of Edmondson (1999). Methodologically we propose that one week of 20 hours of observation (e.g. Hirschfeld et al., 2006) could best reflect the level of TPS, averaging out minor fluctuations in behaviors, meanwhile allowing the monitoring of developments on a longer time-path in e.g. a monthly observation. Even though such a time span of observations can best serve theory, the time investment it requires does not encourage the use of the scheme as a practical tool. To best serve practical interests the approaches of Edmondson (1999) or Algozzine, Newton, Horner, Todd, and Algozzine (2012) are most relevant. Observing in meetings is beneficial as all team members come together and there is a high concentration of interactions (Van Der Weide, 2007). On the other side, meetings often take place in a controlled setting in the sense that the agenda and the chairman control the interaction and discussed topics rather than members discussing with each other freely. This may hide employee behaviors which would have occurred in the workplace (Pentland, 2012).

For the purpose of indicative testing, the observation scheme will be tested in team meetings as well as during daily work. Building on Edmondson (1999) and Algozzine et al. (2012), the minimum duration of a team meeting/session observation is one hour, with a maximum of two hours. To gain an insight on the interactions on the work floor between one and two hours of observations on the work floor will take place. This also allows for the comparison of behaviors in team meetings and work floor behavior. In order to relate the observed meeting- and workplace behaviors to the level of psychological safety the questionnaire developed for the pilot observation is issued among all team members after the observations. The respondents are ensured that their responses are treated confidentially.

After the main field observations in ten workplace teams the final observation scheme is composed. To control for inter-rater reliability (Shadish et al., 2001) this final observation scheme is tested with two authors. Testing is done in one team meeting setting, to test whether the behaviors can be clearly interpreted and whether the observation scheme is transferable to other users through the current procedure and definition list, as presented in Appendix VIII.

Data Analysis

Within the dataset of 129 surveys a total of 14 missing values were identified. Each construct with missing values was checked for significant differences among responses using Chi-

square statistics. The construct information sharing showed significant differences ($p < 0.05$) in responses and is thus not suitable for the substitution of missing values for a mean-response. This led to the exclusion of one response. The remaining constructs showed no significant differences and were thus eligible for mean substitution of missing values. Missing responses were checked for the condition that less than half of the responses for that specific construct were missing. Satisfying this condition all remaining missing responses were substituted for the mean score of the ratings. The next section will analyze the representativeness of the observed behaviors and section 4.4.2 will analyze the survey measures to determine construct validity.

Representativeness of the Data

In analyzing the results of a field observation it is crucial to determine whether the observations are representative for the observed team. Table 7 provides an overview of the mean team responses on whether observed team members experienced their own behavior to be influenced by the observations and whether the observed period is representative for the team. The vast majority (80%) of the team members indicated not to be influenced in their behavior by the observations, which we consider satisfactory for further analysis.

Regarding the representativeness of the observations, most team observations seem to be representative for the team in general. However the response variation is larger than in the measurement of influenced behavior. For example, in team 5 only 50% of the team members indicate that the observed period was representative for the team. On the other hand, more respondents indicated that the representativeness was “neutral” whereas most respondents indicated to be either influenced or not influenced, with a limited amount of “neutral” responses. Nonetheless, at least half, with an average of 73%, of the respondents of each team did find the observed setting representative for the team.

Table 7

Team Scores for Representativeness of Observed Behaviors

	Influenced[a]		Representativeness[b]	
Team	M	SD	M	SD
1	5.89	1.96	5.78	1.48
2	5.38	2.26	4.00	1.98
3	6.00	1.94	4.11	0.71
4	6.58	0.51	4.58	1.93
5	6.00	1.71	3.22	1.82
6	5.50	1.05	4.80	1.87
7	6.50	0.53	4.63	0.99
8	5.11	1.97	4.11	1.30
9	4.79	2.46	4.07	2.31
10	5.64	1.81	4.68	1.47
Average	5.72	1.80	5.41	1.65

n = 128

[a] Question: "My behavior was not influenced by the observation"

[b] Question: "The observed period is comparable to other meetings and work times".

Construct Validity

Before analyzing correlations the survey measures were checked for construct validity. The conflict items originate from multiple sources (Jehn, 1995; Shah & Jehn, 1993) which may lead to overlaps in the different constructs. Furthermore, a similar factor analysis by Jehn et al. (2008) provided multiple double-loaded questions, which indicate an overlap between process and task conflict. Therefore an exploratory factor analysis was conducted. The factor analysis identified only two factors wherein the questions relating to task- and process conflict were identified as belonging to one construct (see Table 8). An attempt to force the identification of three different factors did not further aid in distinguishing between task- and process conflict. One item previously categorized as process conflict was however identified as an element of relationship conflict, probably due to the emotional lading in the item. This item was therefore reallocated to the variable relationship conflict. The remaining task- and process conflict items were merged into one construct: task conflict.

Table 8
Exploratory Factor Analysis of the Conflict Survey Questions

Construct	Question	Task	Relationship
Task	To what extent are there differences of opinion in your team? (*Hoe vaak zijn er tegenstrijdige ideeën in dit team?*)	**.81**	.01
Process	How much disagreement was there about procedures in your team? (*Hoe vaak is er onenigheid over het werkproces in uw team?*)	**.80**	.09
Process	How much disagreement was there about task responsibilities within this team? (*Hoe vaak is er onenigheid over taakverantwoordelijkheden binnen dit team?*)	**.78**	.03
Task	How different were members' viewpoints on decisions (*Hoe vaak zijn de standpunten van teamleden in beslissingen verschillend?*)	**.77**	.02
Task	We had task-related disagreements (*Hoe vaak hebben teamleden taak gerelateerde onenigheid?*)	**.75**	-.07
Task	We often disagreed about work things (*Hoe vaak is uw team het oneens over het werk?*)	**.75**	.01
Process	How frequently were there disagreements about who should do what in your team? (*Hoe vaak is er onenigheid over de taakverdeling binnen het team?*)	**.74**	-.07
Task	How much did this team have to work through disagreements about varying opinions? (*Hoe vaak moet dit team meningsverschillen overbruggen?*)	**.74**	-.03
Process	To what extent did this team disagree about the way to do things in the team? (*Hoe vaak zijn teamleden het oneens over de werkwijze?*)	**.62**	-.13
Relationship	How much fighting about personal issues was there in this team? (*Hoe vaak maken teamleden ruzie over persoonlijke zaken?*)	-.10	**-1.00**
Relationship	We fought about non-work things (*Hoe vaak heeft uw team ruzie over niet-werk gerelateerde zaken?)*	-.04	**-.95**
Relationship	How much fighting about personal issues was there in this team? (*Hoe vaak worden er persoonlijke kwesties uitgevochten in dit team?*)	.06	**-.79**
Process	We fought about work matters (*Hoe vaak hebben teamleden ruzie over werk gerelateerde zaken?*)	.17	**-.73**
Relationship	We disagreed about non-work (social or personality things (*Hoe vaak is uw team het oneens over niet-werk gerelateerde zaken?*)	.04	**-.71**

Note. n = 129; Extraction Method: Principal Component Analysis;
Rotation Method: Oblimin with Kaiser Normalization; Rotation converged in 4 iterations

With the modification of the conflict variables based on the factor analysis, the four remaining constructs at the individual level were tested for validity which yielded satisfactory to high reliabilities ranging from $\alpha = 0.74$ to $\alpha = 0.91$, see Table 9.

Table 9

Reliability Scores at the Individual Level

Construct	Number of Items	α
IPS	5	0.74
Relationship Conflict	5	0.90
Task Conflict	9	0.91
Information Sharing	8	0.90

n = 128

Before analyzing relationships between variables the distribution of data needs to be checked. All four constructs are severely skewed, the amount of available statistical analysis methods are limited due to the inability to fulfill the normality assumption. The Shapiro-Wilkinson, skewness, and kurtosis levels of the different constructs are presented in Table 10.

Table 10

Data-Distribution Tests at the Individual Level

			Shapiro-Wilkinson			
Construct	**M**	**SD**	**Statistic**	**Significance**	**Skewness**	**Kurtosis**
IPS	5.21	0.98	0.90	0.00	-1.52	4.32
Information Sharing	5.50	0.95	0.87	0.00	-1.77	5.05
Relationship conflict	1.73	0.78	0.76	0.00	2.83	14.97
Task Conflict	2.66	0.69	0.84	0.00	2.35	11.86

n = 128

Using Spearman's rho, we computed a correlation table presented in Appendix IX, which confirmed convergent validity for all four constructs. Discriminant validity was only confirmed for task- and relationship conflict but not for information sharing and IPS. In order to confirm discriminant validity, the collinearity statistic variance inflation factor (VIF) was computed at the individual level for all variables. Tolerance scores below 0.20 indicate collinearity issues; VIF scores above 5 suggest a presence of collinearity issues and VIF scores above 10 confirm collinearity and (O'brien, 2007). As presented in Table 11, no constructs have collinearity issues based on either the VIF or the tolerance level. The main concern for collinearity was in the IPS and information sharing relationship but the

collinearity statistics do not reinforce this concern. Therefore construct validity for all constructs is confirmed.

Table 11

Collinearity Statistics at the Individual Level

Path	Tolerance	VIF
Information Sharing -> IPS	0.81	1.24
IPS-> Information sharing	0.69	1.46
Task conflict -> IPS	0.52	1.92
IPS -> Task conflict	0.28	3.56
Relationship conflict -> IPS	0.51	1.95
IPS -> Relationship conflict	0.32	3.17
Task conflict -> Relationship conflict	0.72	1.26
Relationship conflict -> Task conflict	0.70	1.44
Information sharing -> Task conflict	0.34	2.99
Task conflict -> Information sharing	0.53	1.90
Relationship conflict -> Information sharing	0.47	2.15
Information sharing -> Relationship conflict	0.34	2.98

n = 128

After confirming construct validity on the individual level, the data is checked for suitability for aggregation to the team level. To check whether this aggregation is acceptable the intraclass correlations (ICC) of the variables are computed (Bliese, 2000; James, 1982). ICC (1) indicates to what degree team members of the same team agree on a construct, in which case an ICC (1) value between .00 and .50 is desirable (Bliese, 2000; James, 1982). The second ICC measure, ICC (2) indicates to what degree teams can be distinguished on their responses of a variable which should return a value of .50 or higher (Bliese, 2000; James, 1982). In case both the ICC's fall within the desirable range the construct is suitable for aggregation to the tam level (Bliese, 2000; James, 1982). The ICC (1) and ICC (2) scores for the different constructs are presented in the Table 12. All ICC scores fall within the recommended range, and are therefore suitable for an analysis on the team level. Due to the limited sample size on the team level (N = 10), this level of analysis level will not be used for the testing of the theoretical model but rather to identify behaviors associated with TPS. The aggregated survey questions were assessed for reliability and normality, also presented in Table 12.

Table 12

Intraclass Correlations and Team-level Reliability and Distribution

Construct	ICC (1)	ICC (2)	α	Skewness	Kurtosis
TPS	0.18	0.74	0.90	.31	-1.12
Task Conflict	0.12	0.64	0.96	-.59	-.33
Relationship Conflict	0.21	0.77	0.96	.44	-1.00
Information Sharing	0.11	0.61	0.94	-.42	-.65

n = 10

At the team level all survey-measured constructs were normally distributed and thus suitable for linear regression analysis. Due to the method of observation, observed behaviors can only be analyzed at the team level. However, since the small sample size (N = 10) limits the possibilities for further analysis we test the theoretical model at the individual level. Since survey-measured constructs at the individual level lack a normal distribution, no linear regression analysis can be used. Instead we used the modeling program SmartPLS which is based on a partial least squares regression (PLS) to calculate path coefficients and a Student's T-test for significance. This approach relaxes the constraints of the normality assumption (Chin, Marcolin, & Newsted, 1996), thus suitable for testing the theoretical model with this data. Furthermore, SmartPLS allows the testing of moderating effects, following the guidelines proposed by Chin et al. (1996). SmartPLS however provides two shortcomings. First goodness of fit indices in PLS modeling are not suitable for model validation but only for finding explained variances (Henseler & Sarstedt, 2013). Therefore this data does not allow for the identification of "the best model", but several different relations can be tested based on theory to identify which paths provide the best explanation of variance in the data (R^2). Secondly, SmartPLS is unable to work with reciprocal relationships. While the modeling program SPSS Amos is able to deal with such relationships, Amos is unfit for application in the current data set due to the non-normal distribution of individual-level data. This limitation affects the testing of different theoretical models in that only one-way path models can be tested.

In order to analyze the field observations and compare them among the teams, all observations were standardized to the duration of the shortest observation in the corresponding setting (workplace or meeting). Next, all behaviors were checked for their distribution. The total set was split into 29 meeting- and 26. In total 30 behaviors were identified as being non-normally distributed through either the Shapiro-Wilkinson test or skewness levels above 1 or below -1. To remain consistent in the method of analysis and make results comparable, all further conducted tests will assume a non-normal distribution of the data. Due to the strong and significant correlations between the surveyed constructs on the team-level all behaviors which correlate significantly with one of the four constructs are included in the model for further analysis. Therefore an initial correlation table using Spearman's rho was used to identify behaviors correlated to TPS and the other survey-measured constructs, presented in Appendix X.

Results

Within this results section we distinguish between the individual level analysis and the team-level analysis. The aggregated sample size of ten teams is too small for thorough model testing but is sufficient for explorative testing of the observation scheme. At the individual level we present the results of the hypotheses testing and present a model based on the survey data. At the team level we analyze the field observations and explore associations between survey-measured constructs and observed behavior in order to predict TPS.

Testing of the Hypothetical Model

The theoretical model is tested at the individual level. Due to the merging of process- and task conflict, the hypotheses regarding the role of process conflict are excluded from further research. The hypotheses tested in this section are presented below:

H1: Psychological Safety has a positive effect on Information Sharing

H2: Task Conflict has a positive effect on Relationship Conflict

H3: Relationship Conflict has a negative effect on Psychological Safety

H4: Controlling for Relationship Conflict, Task Conflict has a positive effect on Psychological Safety

H5: Psychological Safety moderates the effect of Task Conflict on Relationship Conflict

Hypotheses 1 to 3 were tested through a path analysis. Hypotheses 1 to 3 are confirmed based on the results of the single-path analysis presented in Table 13. Hypotheses 4 and 5 suggest a moderating effect. Testing hypothesis four, the task conflict to IPS path is only significant ($p < 0.01$) when relationship conflict is not included into the model. Including relationship conflict, which is necessary to test the model, provides an insignificant ($p > 0.10$) negative effect of task conflict on IPS. Again, relationship conflict was found to have a significant negative effect on IPS (path coefficient of -0.42, $p < 0.001$).

Table 13

Path Modeling for Hypotheses 1-3

Path	T-statistic[a]	Path Coefficient	Sig.	Explained Variance
IPS -> Information Sharing	20.83	0.84	p<0.01	69.8%
Relationship Conflict -> IPS	6.08	-0.56	p<0.01	31.3%
Task Conflict -> Relationship Conflict	6.21	0.68	p<0.01	46.80%

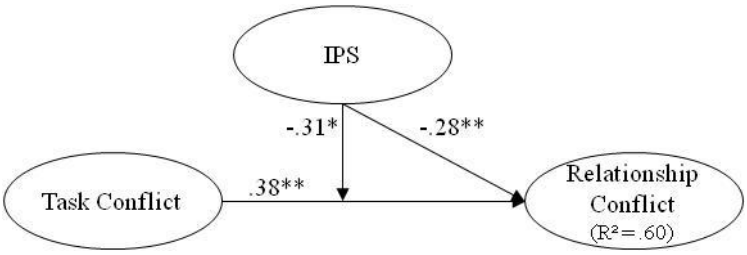
n = 128

a. *df* = 127

Hypothesis 4 is rejected where task conflict has an insignificant effect on IPS when accounting for relationship conflict. That is to say, task conflict was found to have a

significant negative effect on IPS ($p < 0.01$) when not including relationship conflict into the path model. Including relationship conflict as a moderator on the task conflict to IPS relationship provides insignificant results ($p > 0.10$) for both the moderating effect of relationship conflict and the task conflict to IPS relationship.

Hypothesis 5 proposes IPS as a moderator between task- and relationship conflict and is tested and presented as a model in Figure 6. Task conflict was found to have a highly significant positive effect on relationship conflict, though less strong than as presented in Table 13. It was also found that IPS has a significant negative effect on relationship conflict and a marginally significant ($p < 0.10$) moderating effect of IPS in the task conflict-relationship conflict is identified. This indeed suggests that psychological safety can prevent misattribution occurring in task conflict, thus preventing an escalation into relationship conflict. We therefore accept hypothesis 5.



*$p < 0.10$, **$p < 0.05$, ***$p < 0.01$

Figure 6

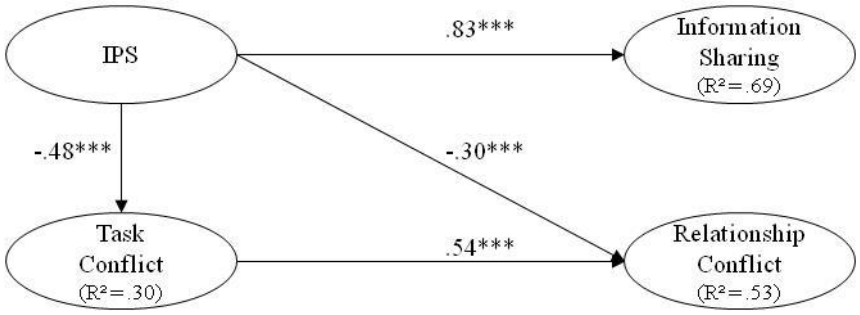
IPS as a moderator between Task- and Relationship Conflict

With the current data and one rejected hypothesis (see Table 14 for an overview), we aim to find a model which fits well to this data. As mentioned before, goodness-of-fit indices are not applicable to PLS modeling other than the explained variance in data (R^2) (Henseler, 2013). Based on the accepted and rejected hypotheses and previously described theory we tested multiple models, after which a new model was computed which fits well with both theory and data (see Figure 7).

Table 14

Overview of Rejected and Accepted Hypotheses

Hypotheses	Results
H1: Psychological Safety has a positive effect on Information Sharing	Accept
H2: Task Conflict has a positive effect on Relationship Conflict	Accept
H3: Relationship Conflict has a negative effect on Psychological Safety	Accept
H4: Controlling for Relationship Conflict, Task Conflict has a positive effect on Psychological Safety	Reject
H5: Psychological Safety moderates the effect of Task Conflict on Relationship Conflict	Accept



*** $p < 0.01$

Figure 7

Model for IPS

In sum, based on this model we propose that IPS is essential for information sharing in teams. Furthermore IPS has a significant negative effect on task conflict, which in turn has a positive effect on relationship conflict. Theoretically and practically most relevant is the effect of IPS on relationship conflict. The total effect of IPS on relationship conflict is -0.56, of which -0.26 is an indirect effect through task conflict, which suggests that IPS is crucial for reducing relationship conflict. At the same time, we proposed that task conflict would be beneficial for psychological safety this effect was found insignificant when including relationship conflict. Having conducted analysis on the individual level we now continue to the main purpose of this research, namely identifying behaviors which can predict the level of TPS.

Observing Psychological Safety

To determine what observable behaviors best predict TPS, analyses on both the individual- and team level were conducted. Considering the limited team sample size, significance for the team-level analysis is set at $\alpha = 0.10$. The individual level constructs information sharing, task conflict, and relationship conflict were set as predictor variables of IPS in a PLS path analysis. The explained variance (R^2) of IPS through the constructs information sharing, task-, and

relationship conflict is 0.75. Table 15 shows the path coefficients for the three paths drawn. At the team level the same paths are analyzed, though through a linear regression. This analysis yields an explained variance (R^2) for TPS of 0.91. This suggests that information sharing, task-, and relationship conflict are better predictors of TPS than they are of IPS. Although at a less significant level, the team level results support the analysis of the individual level constructs. Nonetheless, the sample size is too small to present definitive results. The team level paths are presented in Table 15.

Table 15

Path Coefficients for Explaining IPS

Path (Individual Level)	**Coefficient**	**Path (Team Level)**	**Coefficient**
Information Sharing -> IPS	0.74***	Information Sharing -> TPS	0.45*
Relationship Conflict -> IPS	-0.23***	Relationship Conflict -> TPS	-0.48*
Task Conflict -> IPS	-0.03	Task Conflict -> TPS	-0.41

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

The path coefficients at the individual level suggest that mainly information sharing is indicative of the level of psychological safety with relationship conflict as a second highly significant predictor and an insignificant effect of task conflict on IPS. Noteworthy however is the change in the strength of the relationships when analyzing these paths at the team level. At the individual level analysis information sharing is the main explanatory variable for IPS, whereas at the team level relationship conflict has a larger explanatory power than information sharing. Nonetheless, both levels of analysis suggest a non-significant effect of task conflict on psychological safety. Both levels of analysis confirm that the constructs information sharing, task-, and relationship conflict can predict IPS ($R^2 = 0.75$) and TPS ($R^2 = 0.91$), thus supporting the methodological approach chosen in this research.

Through Spearman's Rho analysis a total of sixteen behaviors, from the observation scheme comprising of 29 behaviors, were identified which significantly ($\alpha = 0.10$) correlated to one of the four surveyed constructs: nine behaviors were observed during meetings and seven in a workplace setting. One behavior, ("resistance against task"), was significantly correlated to a surveyed-construct in both the meeting as well as the workplace setting. The behaviors that were significantly correlated to the survey questions are presented in Table 16. The complete correlation table is presented in Appendix X.

The behaviors in Table 16 are all significantly correlated to at least one of the four surveyed constructs. In line with the initial analysis, all behaviors which positively relate to TPS also relates positively to information sharing, while these relate negatively to relationship- and task conflict. Comparing behaviors in the two observation settings (in meetings and in the workplace) with each other, we found that none of the behaviors which were significant correlated with a survey-measured construct correlated significantly to the same behavior in another setting. This suggests that behavior in meetings is significantly different from workplace behavior where meeting behavior is not representative of workplace

behavior and vice versa. Secondly, it suggests that the same behavior can have a different impact on a team depending on the setting in which it occurs.

Table 16

Meeting and Workplace Behaviors Significantly Correlated to Survey Measures

	TPS	Information Sharing	Relationship Conflict	Task Conflict
Meeting Behavior				
Aggression	-.77***	-.79***	.52	.72**
Resistance against task	-.36	-.48	.56*	.41
Acknowledge own mistake	.29	.19	-.41	-.59*
React cold to enthusiasm	.56*	.49	-.49	-.25
Ask open question	.37	.29	-.58*	-.14
Ask or offer help	.81**	.81***	-.67**	-.55*
Negatively react towards ideas	.54	-.43	.84***	.38
Chatting in sub-groups	-.71**	-.62*	.87***	.43
Giving the same person the attention	.46	.37	-.74**	-.48
Workplace Behavior				
Evade confrontation	-.59*	-.71**	.39	.32
Resistance against task	-.62*	-.77**	.75**	.33
Joke about disagreements	-.60*	-.62*	.77**	.52
Brief consultation	.80***	.73**	-.80***	-.58*
Discuss and compare results	-.78**	-.76**	.73**	.57
Share procedures and knowledge	-.49	-.68**	.38	.56
Re-divide tasks	-.34	-.32	.64*	.29

*$p < 0.10$, **$p < 0.05$, ***$p < 0.01$

To further analyze the differences between meeting and workplace behaviors all behaviors were cross-checked for significant correlations. Of the 25 behaviors which were observed in

both meetings and workplace settings three behaviors had significant correlations with each other. These were agreeing, active listening and pointing towards responsibility. For a more thorough analysis the meeting and workplace behaviors were tested for significant differences between each other (see Table 17). Where deemed necessary for clarity behaviors are specified briefly in brackets. For a complete definition of the behaviors see Appendix VIII.

Eleven of the twenty-five behaviors did not differ significantly between meeting and workplace settings. Moreover, eight of the thirteen behaviors which did not correlate significantly with each other in the meeting and workplace settings showed no significant differences between each other. As such it can be said that this exploratory analysis provides equivocal results on the differences between workplace and meeting behaviors.

Table 17

Differences Between Meeting- and Workplace Behaviors

Significant Differences	***p***	**Non-Significant Differences**	***p***
Relaxed behavior *(make jokes, whistle, singing)*	0.01	Agree	0.26
Personal attention *(talk about personal, non-work related matters)*	0.01	Aggression	0.44
Enthusiasm *(greet, compliment)*	0.01	Evade confrontation	0.66
Closed body posture *(arms closed over each other, lean backwards)*	0.01	Resistance against task	0.44
Give fault	0.01	Point to responsibility	0.68
Listening	0.02	Deny fault	0.35
Interrupting	0.01	Acknowledge own mistake	0.87
Provide or ask feedback	0.01	React cold to enthusiasm	0.67
Joke about disagreements	0.04	Ask open questions	0.44
Ask or offer help	0.01	Discuss and compare results	0.21
Brief consultation	0.01	Re-divide tasks	0.12
Look for improvement opportunity	0.01		
Share procedures and knowledge	0.01		
Negatively react towards ideas	0.01		

Note. Related-samples Wilcoxon Signed Rank Test; Significance set at the 0.10 level

Negative Emotionality.

Besides observing behavior this research also included an experimental measure for negative emotionality. When extreme negative emotions were perceived they were documented as such. It turned out that extreme negative emotionality has only been observed in meetings. Due to the exploratory nature of this measure and a high degree of subjective, personal interpretation we do not assign behaviors with extreme negative emotionality more weight than regularly observed behaviors. Therefore only the frequencies of the extreme negative emotions are included to identify significant correlations. The results are presented in the Table 18.

We hypothesized that negative emotionality has a negative impact on psychological safety and a positive effect on relationship conflict. The correlations indicate that there is indeed a significant positive association between relationship conflict and negative emotionality, as is a significant negative association with both TPS and information sharing. As far as our data allows, it supports this hypothesis. Noteworthy is that negative emotionality has no significant association with task conflict ($p = 0.35$).

Table 18

Negative Emotionality and Survey Measures

Construct	Negative Emotions
TPS	-.62*
Information Sharing	-.67**
Relationship Conflict	.78***
Task Conflict	.33

*$p < 0.10$, **$p < 0.05$, ***$p < 0.01$

Discussion

We aimed to identify observable behaviors which indicate the level of team psychological safety (TPS) without self-report bias. Through a literature review we identified the constructs information sharing, task-, process-, and relationship conflict as related constructs of psychological safety. Our research was designed to identify observable behaviors representing these four constructs, which in turn should allow the measuring of TPS. This was done through two consecutive studies. In Study 1, behaviors were collected, evaluated and rated using the Delphi technique. This led to the specification of 280 behaviors representing these four constructs, which were subsequently reduced to a total of 29 behaviors through processes of aggregation, face-validity checks and expert ratings. The observation scheme containing the 29 behaviors, presented in Appendix VI, was then tested in Study 2 in ten workplace teams, in both meeting and regular workplace settings.

Sub-questions 1 to 5 in this research related to obtaining behaviors representative of the constructs information sharing, relationship-, task-, and process conflict. Both Study 1 and 2 found that multiple behaviors that were associated to these constructs also relate to some of

the other constructs. A partial overlap was expected as the constructs are content-related (Jehn et al., 2008; Siemsen et al., 2009). Most concerns related to the inability to clearly distinguish between process- and task conflict: In contrast to previous studies (e.g. Jehn et al., 2008; Jehn, 1997; Shah & Jehn, 1993) we did not find significant differences between task- and process conflict. In Study 1 expert respondents indicated to have difficulties distinguishing between task- and process conflict and opted to merge process- and task conflict into one. Similarly, in Study 2 an exploratory factor analysis of the conflict items failed to distinguish between task- and process conflict. This is an issue Jehn et al. (2008) also faced but chose to separate the two constructs anyways. Meanwhile, qualitative discussions with team leaders, following the observations, did bring forward differences in task- and process conflict: a qualitative distinction which subsequently was not reflected in our quantitative survey findings. In sum, we merged task- and process conflict into one variable, task conflict, which is in line with other literature studies (Kostopoulos & Bozionelos, 2011; Martinez-Moreno, Zornoza, Gonzalez-Navarro, & Thompson, 2012; Rispens, 2012). With the merging of task- and process conflict we tested the theoretical model upon which this research builds, further elaborated upon in the next section.

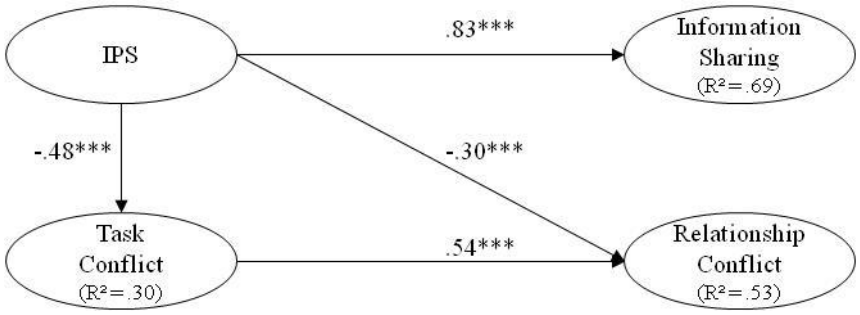
Resulting Theoretical Model

Based upon our findings, we pose that the measuring of TPS is possible by observing (and thus measuring) information sharing, relationship-, and task conflict. At the individual level we found that information sharing and task conflict explain 75% of the variance in IPS and even 91% of the variance of TPS, which supports our approach in this research (see Table 15 for the corresponding path coefficients). However, where previous literature has found equivocal but significant effects of task conflict on psychological safety (e.g. Chen & Lee, 2011; Chen et al., 2011; Jehn et al., 2008), this research has found no significant effect of task conflict on psychological safety at either level of analysis. Nonetheless, IPS was identified as a significant predictor variable of task conflict, thus observing task conflict also aids in the measuring of IPS.

A finding that is consistent with literature is that task conflict has a significant positive effect on relationship conflict (Lehmann-Willenbrock, Grohmann, & Kauffeld, 2011; Rispens, 2012). In this relation, psychological safety may play an important role. Where Tidd et al. (2004) and Chen et al. (2011) propose that psychological safety may prevent task conflict escalating into relationship conflict, we indeed identified psychological safety as a marginally significant ($p < 0.10$) moderator in the task- and relationship conflict relationship and having a negative effect on both task- and relationship conflict. Where theory widely agrees that relationship conflict is undesirable within teams (e.g. De Dreu & Weingart, 2003; Jehn et al., 2008; Jehn, 1997; Rispens, 2012), this research proposes that psychological safety in teams can form the key to preventing or reducing relationship conflict in teams. Perhaps even as Chen et al. (2011) implicitly suggest, psychological safety and relationship conflict are mutually exclusive as psychological safety allows for discussion without reciprocal negative emotions and relationship conflict inherently contains negative emotions.

Then, at the individual level of analysis, the interrelationship between IPS and information sharing was highly significant. Therefore we propose, in line with Siemsen et al. (2009) and Schulte et al. (2012) that high levels of psychological safety encourage

information sharing and vice versa. This research confirms that psychological safety is a main element of information sharing, and thus learning (see Edmondson, 1999), where IPS explained 69,3% of the variation of information sharing. In sum, the survey resulted in a different model, presented in Figure 8, than the original research model.



***$p < 0.01$

Figure 8

Model for IPS

It must be noted that these results apply to an analysis at the individual level; further study should investigate the transferability of these findings to the team level. As the main research question reflects behavior at the team level, the next section will elaborate on the results of the main research question.

Behavior Indicative of Team Psychological Safety

In order to answer the main research question "*Which behaviors that are observable with the naked eye in workplace teams are indicative of the level of team psychological safety?"* the observation scheme developed in Study 1 was tested in Study 2. This scheme consisted of 29 behaviors, of which 3 were only applicable to meeting settings. As we distinguished between workplace and meeting settings in our observation procedures, we thus observed a total of 55 behaviors. The computed correlation table identified a total of 16 behaviors (9 meeting and 7 workplace behaviors) significantly correlated with the survey-measured constructs, presented in Table 16. These behaviors in consistently have the same positive or negative association with TPS and information sharing and the opposite association with relationship- and task conflict. This is in line with previous literature on the positive relationship between information sharing and TPS (Schulte et al., 2012; Siemsen et al., 2009) and the negative relation between TPS and relationship conflict (De Dreu & Weingart, 2003; Rispens, 2012). However, as opposed to Simons and Peterson (2000) and Chen et al. (2011) these results do not suggest that task conflict can be beneficial for TPS in circumstances with low relationship conflict. It does not support the findings of Boyle et al. (2012) that task conflict positively relates to information sharing either. However, these findings support the theoretical model at the individual level, which found IPS and information sharing positively related to each other and task- and relationship conflict positively related to each other.

With regard to meeting- and workplace settings, we found indications that there are differences between the observable behaviors in those two settings. First, none of the

behaviors associated to a survey-measured construct in the meeting setting correlated to the same behavior in the workplace setting, and vice versa. Controlling for significant differences between meeting and workplace behaviors, 14 of the total amount of 25 behaviors significantly differed from each other (see Table 17). This suggests that there are differences between meeting and workplace behaviors, which is in line with Pentland (2012), who found that 33% of the dollar productivity variation can be explained through team-member interaction outside meetings. This is relevant as the goal for developing cost- and time-efficient observable measure for psychological safety is best fulfilled by observing meetings. Nonetheless, these results and the findings of Pentland (2012) suggest that observing meetings only is not sufficient. However, another possibility is that behaviors have a different effect depending on the setting in which this behavior is displayed. After all, 11 of the total amount 25 behaviors did not significantly differ in workplace or meeting settings. Furthermore, 8 of the 13 behaviors significantly correlated to survey-measured constructs did not differ significantly between settings. Therefore it is too early to determine whether team member behavior is different in meeting or workplace settings or that the same behavior has a different effect in different settings. The current data set allows for both arguments. Either way, the current findings argue for two observation schemes, one for meetings and one for workplace settings.

Finally, Study 2 included a preliminary measure for negative emotionality. Jehn et al. (2008) propose that negative emotions largely determine the impact a behavior has on emergent states such as psychological safety. To incorporate this construct into the research a simple measure was developed. When the observer perceived extreme negative emotions this was noted on the observation scheme. Although this is a rather subjective measure, in line with the propositions of Jehn et al. (2008) and Rispens (2012), we found the observed extreme negative emotionality to have a significant negative association with TPS and information sharing and positively to relationship conflict. However, where the individual level model would suggest that negative emotionality is positively related to task conflict, we found no significant association between these two constructs. This supports the notion that TPS is a moderator between task conflict and relationship conflict, where task conflict does not necessarily contain negative emotions (Rispens, 2012).

The observations provided results that were consistent with the individual- and team-level survey analyses. In sum, this research has identified negative emotionality, nine meeting-, and seven workplace behaviors which can be used for measuring team psychological safety.

Limitations and Future Research

This section will reflect upon the limitations of this research, what was done to mitigate the negative effects of these limitations and how further research can address these limitations. Study 1 consisted of a Delphi study, which allowed for the collection of a broad array of behaviors. However, the behaviors collected in this Delphi round are not argued for by the experts content-wise. Therefore this research has only obtained stand-alone behaviors through Study 1 rather than behaviors with a well-explained linkage to various measured constructs. The first intention was to conduct multiple focus group sessions to obtain behaviors and qualitative arguments for these behaviors instead of conducting a Delphi study. Focus groups

provide the opportunity to explore a broad array of behaviors, and in addition the opportunity to explore the motivations for the given answers (Morgan, 1996). However, concerns regarded the high level of difficulty for respondents to link concrete behaviors to relatively abstract definitions out of the blank. This could have been solved by providing participants with a list of pre-determined behaviors and build upon them. However, this is in conflict with the non-direction criterion for focus groups (Merton & Kendall, 1946), which was one of the main reasons for choosing this data collection method. We chose to use the Delphi method (Keeney, Hasson, & McKenna, 2001) because it includes multiple rounds, in which the first round is designed to collect a broad array of behaviors and the second round to classify and further refine these behaviors. The use of the Delphi technique in Study 1 however has presented several limitations to this research.

Our main concern in Study 1 regards the sample variation. The first Delphi round, in which behaviors were collected, only experts of a small sized consultancy firm participated. These consultants may be influenced by an organizational focus towards a limited set of behaviors. More preferable would have been for a larger group of unrelated experts to collect these behaviors. Likewise, all the settings in which the behaviors were observed are current customers of these experts. This may pose generalizability questions for the representativeness of these behaviors across other organizations and teams. We thus attempted to increase the variation in responses by inviting internal change managers from other companies in the second Delphi round. Although the external response was low, the variation has increased compared to the first round. For future research we recommend to increase sample variation through the use of different networks rather than one. This may also serve to address the next limitation, which regards the amount of respondents.

The second Delphi round yielded 24 respondents divided over two questionnaire versions. This provided a total of twelve responses per behavior, which is insufficient for a quantitative analysis of the responses and subsequent selection. Behaviors were eliminated or included for further analysis through applying cut-off points which, due to the limited sample size, can be viewed as arbitrary. Nonetheless, we argue that with the limited sample size this was the best approach. To increase reliability, results were afterwards checked for face validity by both authors to increase the quality, which led to minor modifications. Nonetheless, this selection procedure could have been performed better with a larger and more varied sample size. A larger sample size could have been achieved, were it not for a high level of attrition. The level of attrition in this questionnaire was high (45%), with 53 respondents answering at least one question or more. However, respondents who closed their internet browser and attempted to respond for a second time are counted as a new respondent. Therefore the attrition rate may be lower, but the exact percentage cannot be presented. The high attrition is probably due to the difficulty of the questionnaire, where multiple internal and external respondents have indicated that it is hard to fill in. However, prior to issuing the questionnaire the method of questioning has been presented to two consultants who considered it doable and acceptable. Therefore we propose that it is rather the content of the questionnaire (rating behaviors) rather than the method of questioning responsible for the high rate of attrition. This proposition is supported by the relatively high internal response rate compared to the external response rate. This suggests that the more motivated or committed respondents continue with the research (Shadish et al., 2001). For future research we propose

to conduct more elaborate testing of the questionnaires, which may provide suggestions to simplify the questions in order to decrease attrition.

Relating to the field observations in Study 2, we identify four main limitations. First, we observed ten workplace teams in two organizations. To begin with, the results can therefore not be generalized beyond workplace teams (Shadish et al., 2001). Furthermore, these teams are all current or past relations of a small sized consultancy firm, which may have influenced the teams through interventions by this firm. Not all teams have been active with Lean, but they are all to a more or lesser degree affected by the current or past project of the consultancy firm, which may encourage a less diverse or more specific set of behaviors within the teams. These ten teams also stem from two different organizations, which raises the concern whether we have observed two company cultures rather than workplace behavior. Finally, the small team sample size did not allow for deeper analysis than correlations. Therefore we propose that our results are not definitive, but rather indications which can be further investigated in later research. In order to increase the generalizability of the results we urge a repetition of Study 2 in more and different workplace teams, through which a more solid ground for generalization to workplace behavior can be made.

Our second concern again relates to the sample, being whether the observations have influenced team-member behavior. Measures have been taken to minimize the impact of the field observations by introducing the observer to the team, ensuring that there is no "good or bad behavior", and encouraging that team members remain themselves. To account for manipulation of behavior the survey included two questions regarding this concern. The majority of the team members in all participating teams indicated not to be influenced by the behavior and that the observed time was representative. Nonetheless, in some teams up to 29% of the team members indicated to be influenced by the observations or that the time observed was not representative for the team. Accounting for social-desirable answering (Shadish et al., 2001), the actual percentage may be even higher. Therefore caution must be taken when interpreting the research results as representative for workplace behavior until further research has increased the validity of these findings.

The third concern regards the fact that we were did not control for inter-rater reliability since all ten teams were observed by the same person (Shadish et al., 2001). However, by using the same observer within all ten teams each behavior has been observed consistently. This however, does not answer the question whether different observers would have yielded the same results with the used observation scheme, i.e. inter-rater reliability. In order to check whether the 15 behaviors identified as predictors of TPS in Study 2 are interpreted similarly by different observers, we composed an observation scheme containing both workplace and meeting behaviors. This scheme was subsequently tested by one of the authors together with a consultant of a medium-sized consultancy firm in a team meeting of the same firm. Here we ensured the observer was not a team member of the observed team. The observing consultant was a 33 year old female with 9 years of experience with behavior in the workplace. In addition, the consultant has conducted both a master and PhD in organizational psychology, thus the background and experience of this consultant has a strong academic and practical link to workplace behavior. The observed team consisted of five members: four women, one man, with an average age of 32. Prior to the test observation, the consultant was provided with the observation scheme, definitions and the observation

procedure. Several questions of the observing consultant regarding behavioral definitions were clarified and directly translated into a more specified list of definitions for the behaviors in the scheme. After the observation results were compared and were found to be consistent. In spite of carefully reading definitions of behaviors in advance and asking several questions, the consultant again expressed concerns regarding several definitions, which led to a further refinement of the definitions. In addition, the consultant provided feedback regarding the lay-out and complexity of the scheme. Despite careful reading and multiple discussions preceding the observation, the consultant indicated that an observation simulation in advance of the actual observation is necessary. The scheme, containing the full range of 15 behaviors, was too large for an observer untrained in this specific scheme to adequately apply the scheme. Considering the fact that this research has provided two observation schemes, one with 9 and one with 7 behaviors, both observers agreed this issue is sufficiently tackled. Thus we have, to a limited extent, checked the inter-rater reliability of the two resulting observation schemes. Nonetheless, further research with more observers is needed in which both meeting and workplace settings are observed, this may aid in further refining the scheme's behavioral definitions.

The last concern regarding the field observations is the measurement of negative emotionality. Where Jehn et al. (2008) found that negative emotionality to a large extent determines the impact of conflict on psychological safety, this research incorporated a basic measure of negative emotionality. To reduce complexity of the observation scheme, only extreme negative emotions were measured. The definition of extreme negative emotionality is prone to subjective judgment, thus the risk of inconsistent measurement is high. Nonetheless, this preliminary measure of negative emotionality does suggest that it can aid in predicting the level of TPS. Therefore we call upon academics to re-develop or further refine an observational measure for negative emotionality, which can aid the further development of both conflict literature and the measurement of TPS.

Study 2 provided indications that there are significant differences between behaviors in meeting and workplace settings. These results allow for two paths of reasoning, the first being that team members behave differently depending on the setting they are in. On the other hand there are indications that the same behavior may have a different effect on psychological safety, information sharing, task-, and relationship conflict depending on the setting they are in. Further research can further elaborate on the presence – or absence- of such a difference. This may lead to the development of two observation schemes for different settings.

Perhaps one of the main limitations of this research concerns the measurement of task conflict. Cultural and linguistic factors may have led to a significant measurement error of task conflict. Although the constructs have been statistically validated, there are concerns regarding the interpretation of the two conflict measures. The survey questions have been translated in a methodologically correct manner (Overbeek, 2012). Nonetheless, an unforeseen problem arises through an emotional lading in the questions. As identified during the pilot Delphi round in Study 1, the Dutch word conflict implies a much more intense discussion than the English definition of task conflict proposes. More specifically, where the definition of task conflict refers to disagreements in work related matters (Jehn, 1997) which can be free of negative emotions (Chen & Lee, 2011), the Dutch questions for task conflict imply the presence of negative emotions. Furthermore, the Dutch version of the questionnaire

seems to exclude task discussions in the measurement of task conflict, even though the original construct definition aims to include these in its measurement (Jehn, 1997). This notion is supported by conversations with team leaders after the observations. None of the observed and surveyed teams indicated to have high levels of task conflict. Meanwhile, team leaders indicated that multiple teams frequently have task content-related discussions. Therefore we propose that even though the questions for task- and relationship conflict are statistically valid, it might not fully reflect the construct it is intended to reflect. These concerns are further confirmed by differences in empirical results from literature the results found in this research. Where other literature consistently found significant effects of task conflict on psychological safety, be it negative or positive (De Dreu & Weingart, 2003), Study 2 failed to identify such an effect when accounting for relationship conflict. The survey-measurement of task conflict could not be verified by another measure due to the full reliance on self-reports. Where retrospective conversations with team leaders were meant to provide feedback on the observed behavior and the survey responses, it also provided valuable qualitative data on the presence of psychological safety, information sharing, task-, process-, and relationship conflict. However, this was not a structured conversation nor was did the same questions or discussions arise across the different teams. By incorporating team leader reports this research could have tackled the measurement error resulting from self-reports.

In the same line with the concerns of the survey-measure for task conflict, we raise our concerns for the measurement of process conflict. Thus far, literature has been inconsistent in the distinction between task- and process conflict. Shah and Jehn (1993) initially framed process conflict as administrative conflict, two years later Jehn (1995) only distinguished between task- and relationship conflict, not mentioning process conflict. The term process conflict, as far as we know of, has first been framed by Jehn (1997). One would logically argue that one builds upon more recent literature, thus including process conflict into later research. However, we find that a vast amount of literature opts to distinguish only between task- and relationship conflict (e.g. Chen et al., 2011; Choi & Cho, 2011; Lehmann-Willenbrock et al., 2011; Rispens, 2012). Meanwhile, the research including process conflict seems limited (e.g. Behfar, Mannix, Peterson, & Trochim, 2011; Jehn et al., 2008; Martinez-Moreno et al., 2012). In an attempt to further shed light on the role of process conflict we have been unable to distinguish between process- and task conflict in both Study 1 and Study 2. Jehn et al. (2008) faced the same issue, though they opted to maintain process conflict as a separate construct. Combining the concerns for the measurement of task conflict and the differences between task- and process conflict we call for further reassessment of these two concepts. Where Jehn (1997) states there is a real difference between these two constructs, we have found no supporting evidence. First, we call for research which can clearly distinguish these constructs in such a way that they are not only separated conceptually, but also statistically. This research should provide grounds for further literature development, in which the distinction between task- and process conflict is consistently made –or not made. Such research should, logically, also re-evaluate the measurement of task conflict, with which our concerns regarding the measurement of task conflict are addressed. Having said so, we stress the importance of adequate translation of survey-measures; not only grammatically, but also culturally.

The last limitation of this study is that this is not a longitudinal study, thus no causal conclusions may be drawn through analysis of the survey results. The directionality of the relationships proposed in the model, presented in Figure 8, is based upon a broad base of literature. However, due to an overall lack of longitudinal studies in this field, most literature upon which this model is based is not longitudinal either. This poses a risk for further theoretical development in this field, where assumptions are insufficiently tested through longitudinal research.

Having discussed the limitations of this research, we now present directions for further research which can help gain a deeper understanding of the role of TPS. This research has focused on developing a new measure for team psychological safety. This research was developed because psychological safety is a crucial element for team learning (Edmondson, 1999). Considering the scope of this exploratory research, priority was given to develop a new measure for psychological safety, which led to the inclusion of conflict and information sharing in the operationalization procedure. However, future learning has not been incorporated into this research. To provide more insights on the role of TPS on team learning, future research should include the team learning variable into the research model. This is not to say that the reasoning of Edmondson (1999) is incorrect, rather it is incomplete. Kostopoulos and Bozionelos (2011) identified task conflict to contribute to learning as well, while not considering TPS. We argue that a more complete model including TPS, conflict, information sharing, and learning will provide literature with a deeper understanding on the role and importance of the individual variables. When including learning into further research, we call to replicate the approach taken by Kostopoulos and Bozionelos (2011) who distinguished between explorative and exploitative learning. Ideally, such a model is tested in a longitudinal setting.

Furthermore, this research has included information sharing in the research model. In a more elaborate approach, Siemsen et al. (2009) distinguished between tacit and explicit information exchange and found that psychological safety is mainly relevant for the sharing of tacit knowledge whereas it has a limited influence on sharing explicit knowledge. Where information and knowledge exchange is essential for learning, literature can benefit from making a further distinction in the different types of information sharing and the role that psychological safety has within these mechanisms. Furthermore there are propositions that information sharing may trigger task conflict. Entrepreneurship theory by Alvarez and Barney (2007) propose that sharing new information and knowledge, be it tacit or explicit, may create inconsistencies or gaps in existing knowledge. Alvarez and Barney (2007) propose that overcoming these knowledge gaps is the learning process. Likewise, task conflict inherently follows from diverging views within a team (Boyle et al., 2012). Therefore one may propose that at the team level, psychological safety stimulates information sharing (Edmondson, 1999; Siemsen et al., 2009). In turn, information sharing may create knowledge gaps with competing views (Boyle et al., 2012), which triggers task conflict. In this task conflict opposing viewpoints are openly discussed (Chen et al., 2011), a mechanism through which task conflict increases both explorative and exploitative learning (Kostopoulos & Bozionelos, 2011). Merging the above into a research model, we hereby encourage further research to explore, test and refine the model presented in Figure 9.

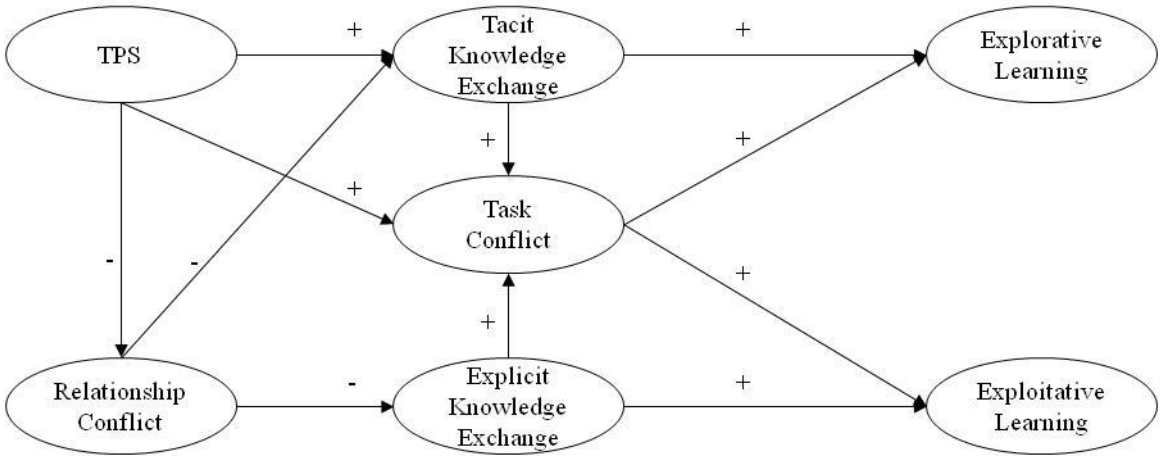


Figure 9

Future Research Model

Finally, leadership behavior is found to be a major influencer for the level of psychological safety (Carmeli et al., 2010; Halbesleben & Rathert, 2008; Hirak et al., 2012; Walumbwa & Schaubroeck, 2009). There is a vast amount of literature (e.g. Carmeli et al., 2010; de Vries, Jehn, & Terwel, 2012; Hirak et al., 2012) describing which leadership behaviors are desirable or undesirable in teams and how they affect psychological safety. However, these behaviors have not been incorporated into the observation scheme as the intention was to measure team member behavior which is indicative of psychological safety. For tracking team development it is however also relevant to specifically observe team leader behavior as the team leader is found to play have a large effect on the team (Carmeli et al., 2010; Van Dun & Wilderom, 2012).

Practical implications

Although this research has been conducted within a limited sample set, preliminary indications valuable for practitioners are presented below. This research confirmed the importance of psychological safety on both the individual and the team level for stimulating information sharing and decreasing the amount of destructive conflict in teams. Therefore we argue that psychological safety is crucial in teams which aim to continuously improve, such as Lean teams (Liker & Franz, 2011). Managers, team leaders, consultants and other practitioners are therefore encouraged to monitor both the team- and individual level of psychological safety.

Whereas the team level of psychological safety is ideally as high as possible, at the individual level practitioners are warned for large inter-personal differences. Large gaps in individual levels of psychological safety were found to function as self-reinforcing mechanisms leading to even larger gaps over time (Schulte et al., 2012). Such developments will ultimately lead to teams consisting of sub-groups, where one or more sub-groups will refrain from information sharing. For measuring psychological safety the survey developed by Edmondson (1999) can be valuable for measuring the current team level of psychological

safety and individual differences, but is less suitable for tracking team development over time. Especially in Lean teams, where generating ideas and improving is a continuous activity rather than a temporary one (Delbridge et al., 2000), frequently monitoring team psychological safety is crucial. Our observation scheme may aid such frequent measurement and prevents response exhaustion.

Furthermore, rather than preventing and solving conflicts, our findings suggest that increasing psychological safety within the team may aid to decrease within-team conflict. Building a solid basis through a high level of psychological safety may be rewarded through a structural decrease in relationship conflict meanwhile allowing for some constructive task conflict with a subsequent improved quality of decision making. We propose that task-related discussions in teams are valuable, as long as these discussions are free from negative emotions. For example, in a meeting a task-related discussion is ideally characterized by open questions, calls for and offerings of help and perhaps even an acknowledgement of failing to meet a previously made commitment. In such a work setting team members share their concerns and ideas with the entire group rather than limiting the communication to small sub-groups. When the meeting shifts to small discussions in sub-groups, reactions towards suggestions are negative, or team members display signs of aggression, this is an indication that the level of psychological safety is low. In such a situation the negative emotions can be an indication of relationship conflict, where the real issue is not the task-discussion at hand but rather a personal issue or irritations underlying the discussion. Practitioners can intervene upon such observations to reduce the amount of relationship conflict in the team in order to prevent or reduce the harmful consequences of such relationship conflict.

To aid practitioners in monitoring team psychological safety, we provide two observation schemes: one for team meetings and one for the workplace. These observation schemes contain behaviors which were found to be significantly correlated to team psychological safety or the constructs information sharing, task-, or relationship conflict. The observations conducted with these two schemes provide practitioners an indication of the level of team psychological safety. However, we do not encourage practitioners to intervene on all observed behaviors. For example, reacting cold to enthusiasm is an indication of high team psychological safety. Nonetheless, we do not propose to actively promote such responses. Rather we propose that this behavior is an indication that team members feel safe to respond calmly and critically towards enthusiasm. On the other hand, the meeting behavior "ask open questions" is an indication of high psychological safety and at the same time a behavior which we argue that should be encouraged within teams. Table 19 presents two extra columns to clarify whether the behaviors indicate a high or low level of team psychological safety and whether we propose to intervene or not. Where deemed necessary behaviors are accompanied with a brief definition. For a more elaborate definition and a ready-to-use observation scheme see Appendix IX.

Table 19

Team Behaviors for Observing Team Psychological Safety

Team Behaviors	**Indicator of TPS**	**Intervention Needed**
Meeting Behaviors		
Aggression *(raise voice, large gestures)*	Low	Yes
Negatively react towards ideas *(on ideas or opinions of other team members)*	Low	Yes
Resistance against task *(react negatively towards the execution of a task)*	Low	Yes
Chatting or signing in sub-groups	Low	Yes
React cold to enthusiasm	High	No
Give the same people the attention *(with every new agenda topic)*	High	No
Ask open questions	High	Yes
Ask or offer help	High	Yes
Acknowledge own mistake	High	No
Workplace Behaviors		
Evade confrontation *(do not react to addressed problems or confrontations)*	Low	No
Resistance against task *(react negatively towards the execution of a task)*	Low	Yes
Discuss and compare results	Low	No
Re-divide tasks *(of routine or previously divided tasks)*	Low	Yes
Joke about disagreements *(about previous feedback, procedures or issues)*	Low	Yes
Brief consultation	High	No
Share procedures, knowledge and experiences	High	Yes

Conclusion

Through two consecutive studies this research identified two sets of meeting and workplace behaviors which can indicate the level of team psychological safety. We found that task conflict is damaging for the level of psychological safety through its strong relation with relationship conflict. When accounting for relationship conflict, the negative effect of task conflict became insignificant. In addition, we found psychological safety to be a moderator in the task conflict towards relationship conflict path. Combining these findings, we propose in line with Simons and Peterson (2000) that task conflict is mainly detrimental in teams through relationship conflict. In addition, this research supports the findings that psychological safety plays a main role in decreasing the level of relationship conflict, both directly as indirectly. At the same time this research has raised concerns regarding the Dutch measure of task- and process conflict, and the validity and measurement of process conflict as a whole.

Furthermore we have found that psychological safety is a main contributor to information sharing, which has a self-reinforcing effect where information sharing also contributes to the level of psychological safety. Thus where this research stressed the importance of psychological safety as an element of learning, it does indeed confirm the crucial role psychological safety can play within a team. Based on our findings at the individual level of analysis we proposes multiple directions for future research to test a more elaborate and complete theoretical model (see Figure 9). Herein we propose to develop a model which more clearly links psychological safety to team learning, and to identify through which mechanisms psychological safety stimulates learning.

The field study conducted in this research has also provided two preliminary lists of observable behaviors which may aid in observing psychological safety with the naked eye. Through exploratory observations in ten workplace teams a total of sixteen behaviors were identified which are significantly associated to psychological safety or one of the other surveyed constructs. Herein we found indications that workplace behavior significantly differs from meeting behaviors within the same team, and that the behaviors in the two settings therefore also have different effects within the team. This suggests that there is no general good- or bad behavior, but rather that the desirability of the behavior depends on the setting in which it occurs.

Moreover, extreme negative emotionality was also found to significantly associate to relationship conflict (positively) and psychological safety (negatively). Due to the limited team sample size, Study 2 in this research can only provide indications of which behavior is indicative of team psychological safety. Therefore we strongly encourage other scholars to build further on these indications, which do indeed suggest that psychological safety is measurable by observing team behavior and negative emotionality.

Concluding, where psychological safety is a largely unobservable affective state, consisting of “motivational tendencies, relations among team members and affective reactions” (Kozlowski & Ilgen, 2006, p. 87) this research has set the first step in observing psychological safety with the naked eye.

References

Abikoff, H., Gittelman, R., & Klein, D. F. (1980). Classroom observation code for hyperactive children: A replication of validity. *Journal of Consulting and Clinical Psychology, 48*(5), 555-565. doi: 10.1037/0022-006x.48.5.555

Algozzine, B., Newton, J. S., Horner, R. H., Todd, A. W., & Algozzine, K. (2012). Development and technical characteristics of a team decision-making assessment tool: Decision observation, recording, and analysis (DORA). *Journal of Psychoeducational Assessment, 30*(3), 237-249. doi: 10.1177/0734282911423884

Alvarez, S. A., & Barney, J. B. (2007). Discovery and Creation: Alternative theories of entrepreneurial action. *Strategic Entrepreneurship Journal, 1*(1-2), 11-26. doi: 10.1002/Sej.4

Amabile, T. M., Conti, R., Coon, H., Lazenby, J., & Herron, M. (1996). Assessing the work environment for creativity. *Academy of Management Journal, 39*(5), 1154-1184. doi: 10.2307/256995

Baer, M., & Frese, M. (2003). Innovation is not enough: Climates for initiative and psychological safety, process innovations, and firm performance. *Journal of Organizational Behavior, 24*(1), 45-68. doi: 10.1002/job.179

Bales, R. F. (1950). A set of categories for the analysis of small group interaction. *American Sociological Review, 15*(2), 257-263. doi: 10.2307/2086790

Behfar, K. J., Mannix, E. A., Peterson, R. S., & Trochim, W. M. (2011). Conflict in small groups: The meaning and consequences of process conflict. *Small Group Research, 42*(2), 127-176. doi: 10.1177/1046496410389194

Bliese, P. D. (2000). Within-group agreement, non- independence, and reliability: Implications for data aggregation and analysis. In K. J. Klein & S. W. J. Kozlowski (Eds.), *Multilevel theory, research and methods in organizations: Foundations, extensions and new directions.* (pp. 349- 381). San Francisco: Jossey-Bass. doi:

Boyle, P. J., Hanlon, D., & Russo, J. E. (2012). The value of task conflict to group decisions. *Journal of Behavioral Decision Making, 25*(3), 217-227. doi: 10.1002/bdm.725

Bradley, B. H., Postlethwaite, B. E., Klotz, A. C., Hamdani, M. R., & Brown, K. G. (2012). Reaping the benefits of task conflict in teams: The critical role of team psychological safety climate. *Journal of Applied Psychology, 97*(1), 151-158. doi: 10.1037/a0024200

Carmeli, A., Brueller, D., & Dutton, J. E. (2009). Learning behaviours in the workplace: The role of high-quality interpersonal relationships and psychological safety. *Systems Research and Behavioral Science, 26*(1), 81-98. doi: 10.1002/sres.932

Carmeli, A., & Gittell, J. H. (2009). High-quality relationships, psychological safety, and learning from failures in work organizations. *Journal of Organizational Behavior, 30*(6), 709-729. doi: 10.1002/job.565

Carmeli, A., Reiter-Palmon, R., & Ziv, E. (2010). Inclusive leadership and employee involvement in creative tasks in the workplace: The mediating role of psychological safety. *Creativity Research Journal, 22*(3), 250-260. doi: 10.1080/10400419.2010.504654

Chang, A., Bordia, P., & Duck, J. (2003). Punctuated equilibrium and linear progression: Towards a new understanding of group development. *Academy of Management Journal, 46*(1), 106-117. doi: 10.2307/30040680

Chen, C. M., & Lee, T. H. (2011). Emotion recognition and communication for reducing second-language speaking anxiety in a web-based one-to-one synchronous learning environment. *British Journal of Educational Technology, 42*(3), 417-440. doi: 10.1111/j.1467-8535.2009.01035.x

Chen, Z., & Zhao, D.-t. (2012). When and how employees learn: The effect of task conflict on learning behaviour. *Social Behavior and Personality, 40*(1), 47-53. doi: 10.2224/sbp.2012.40.1.47

Chen, Z. J., Zhang, X., & Vogel, D. (2011). Exploring the underlying processes between conflict and knowledge sharing: A work-engagement perspective. *Journal of Applied Social Psychology, 41*(5), 1005-1033. doi: 10.1111/j.1559-1816.2011.00745.x

Chin, W. W., Marcolin, B. L., & Newsted, P. R. (1996). *A partial least squares latent variable modeling approach for measuring interaction effects: Results from a Monte Carlo simulation study and voice mail emotion/adoption study*. Paper presented at the Seventeenth International Conference on Information Systems, Cleveland, Ohio. doi: 10.1287/isre.14.2.189.16018

Choi, K., & Cho, B. (2011). Competing hypotheses analyses of the associations between group task conflict and group relationship conflict. *Journal of Organizational Behavior, 32*(8), 1106-1126. doi: 10.1002/job.733

Choo, A. S., Linderman, K. W., & Schroeder, R. G. (2007). Method and psychological effects on learning behaviors and knowledge creation in quality improvement projects. *Management Science, 53*(3), 437-450. doi: 10.1287/mnsc.1060.0635

Ciborra, C. U. (1996). The platform organization: Recombining strategies, structures, and surprises. *Organization Science, 7*(2), 103-118. doi: Doi 10.1287/Orsc.7.2.103

Cohen, S. G., & Bailey, D. E. (1997). What makes teams work: Group effectiveness research from the shop floor to the executive suite. *Journal of Management, 23*(3), 239-290. doi: 10.1016/S0149-2063(97)90034-9

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. doi: 10.1037/0021-9010.88.4.741

De Vries, G., Jehn, K. A., & Terwel, B. W. (2012). When employees stop talking and start fighting: The detrimental effects of pseudo voice in organizations. *Journal of Business Ethics, 105*(2), 221-230. doi: 10.1007/s10551-011-0960-4

Delbridge, R. (1995). Surviving JIT: Control and resistance in a Japanese transplant. *Journal of Management Studies, 32*(6), 803-817. doi: 10.1111/j.1467-6486.1995.tb00153.x

Delbridge, R., Lowe, J., & Oliver, N. (2000). Shopfloor responsibilities under lean teamworking. *Human Relations, 53*(11), 1459-1479.

Dibia, I. K., & Spencer, O. (2010). *Lean culturerization: A long term philisophy for full optimization of the human resource*. Paper presented at the World Congress on Engineering and Computer Science 2010 Vol II, San Fransisco, USA.

Donaldson, S. I., & Grant-Vallone, E. J. (2002). Understanding self-report bias in organizational behavior research. *Journal of Business and Psychology, 17*(2), 245-260. doi: 10.1023/A:1019637632584

Edmondson, A. C. (1999). Psychological safety and learning behavior in work teams. *Administrative Science Quarterly, 44*, 350-383. doi: 10.2307/2666999

Edmondson, A. C. (2008). Managing the risk of learning: Psychological safety in work teams *International Handbook of Organizational Teamwork and Cooperative Working* (pp. 255-275): John Wiley & Sons Ltd. doi: 10.1002/9780470696712.ch13

Fellers, G., & Saudargas, R. A. (1987). Classroom behaviors of LD and nonhandicapped girls. *Learning Disability Quarterly, 10*(3), 231-236. doi: 10.2307/1510495

Garvin, D. A., Edmondson, A. C., & Gino, F. (2008). Is yours a learning organization? *Harvard Business Review, 86*(3), 109-116.

Gong, Y., Cheung, S.-Y., Wang, M., & Huang, J.-C. (2012). Unfolding the proactive process for creativity: Integration of the employee proactivity, information exchange, and

psychological safety perspectives. *Journal of Management, 38*(5), 1611-1633. doi: 10.1177/0149206310380250

Haahr, M., & Haahr, S. (2012). Random.org Retrieved 17-12, 2012, from http://www.random.org/sequences/

Hackman, J. R. (1987). The design of work teams. In J. Lorsch (Ed.), *Handbook of Organizational Behavior* (pp. 315-342). Englewood Cliffs, NJ: Prentice-Hall.

Halbesleben, J. R. B., & Rathert, C. (2008). The role of continuous quality improvement and psychological safety in predicting work-arounds. *Health Care Management Review, 33*(2), 134-144. doi: 10.1097/01.HMR.0000304505.04932.62

Henseler, J., & Sarstedt, M. (2013). Goodness-of-fit indices for partial least squares path modeling. *Computational Statistics, 28*(2), 565-580. doi: 10.1007/s00180-012-0317-1

Hirak, R., Peng, A. C., Carmeli, A., & Schaubroeck, J. M. (2012). Linking leader inclusiveness to work unit performance: The importance of psychological safety and learning from failures. *Leadership Quarterly, 23*(1), 107-117. doi: 10.1016/j.leaqua.2011.11.009

Hirschfeld, R. R., Jordan, M. H., Feild, H. S., Giles, W. F., & Armenakis, A. A. (2006). Becoming team players: Team members' mastery of teamwork knowledge as a predictor of team task proficiency and observed teamwork effectiveness. *Journal of Applied Psychology, 91*(2), 467-474. doi: 10.1037/0021-9010.91.2.467

Hollenbeck, J. R., Colquitt, J. A., Ilgen, D. R., LePine, J. A., & Hedlund, J. (1998). Accuracy decomposition and team decision making: Testing theoretical boundary conditions. *Journal of Applied Psychology, 83*(3), 494-500. doi: 10.1037/0021-9010.83.3.494

James, L. R. (1982). Aggregation bias in estimates of perceptual agreement. *Journal of Applied Psychology, 67*, 219-229. doi: 10.1037//0021-9010.67.2.219

Jehn, K., Greer, L., Levine, S., & Szulanski, G. (2008). The effects of conflict types, dimensions, and emergent states on group outcomes. *Group Decision and Negotiation, 17*(6), 465-495. doi: 10.1007/s10726-008-9107-0

Jehn, K. A. (1995). A multimethod examination of the benefits and detriments of intragroup conflict. *Administrative Science Quarterly, 40*(2), 256-282. doi: 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. doi: 10.2307/2393737

Kahn, W. A. (1990). Psychological conditions of personal engagement and disengagement at work. *Academy of Management Journal, 33*(4), 692-724. doi: 10.2307/256287

Karn, J. S., & Cowling, A. J. (2008). Measuring the effect of conflict on software engineering teams. *Behavior Research Methods, 40*(2), 582-589.

Keeney, S., Hasson, F., & McKenna, H. (2006). Consulting the oracle: Ten lessons from using the Delphi technique in nursing research. *Journal of Advanced Nursing, 53*(2), 205-212. doi: 10.1111/j.1365-2648.2006.03716.x

Keeney, S., Hasson, F., & McKenna, H. P. (2001). A critical review of the Delphi technique as a research methodology for nursing. *International Journal of Nursing Studies, 38*(2), 195-200. doi: 10.1016/S0020-7489(00)00044-4

Kostopoulos, K. C., & Bozionelos, N. (2011). Team exploratory and exploitative learning: Psychological safety, task conflict, and team performance. *Group & Organization Management, 36*(3), 385-415. doi: 10.1177/1059601111405985

Kozlowski, S. W. J., & Ilgen, D. R. (2006). Enhancing the effectiveness of work groups and teams. *Psychological Science in the Public Interest, 7*(3), 77-124. doi: 10.1111/j.1529-1006.2006.00030.x

Lehmann-Willenbrock, N., Grohmann, A., & Kauffeld, S. (2011). Task and relationship conflict at work construct validation of a German version of Jehn's intragroup conflict

scale. *European Journal of Psychological Assessment, 27*(3), 171-178. doi: 10.1027/1015-5759/a000064

Liker, J. K., & Franz, J. K. (2011). *The Toyota way to continuous improvement: Llinking strategy and operational excellence to achieve superior performance*. New York: McGraw-Hill.

Liker, J. K., & Morgan, J. M. (2006). The Toyota way in services: The case of lean product development. *Academy of Management Perspectives, 20*(2), 5-20. doi: 10.5465/AMP.2006.20591002

Lingard, L., Vanstone, M., Durrant, M., Fleming-Carroll, B., Lowe, M., Rashotte, J., Tallett, S. (2012). Conflicting messages: Examining the dynamics of leadership on interprofessional teams. *Academic Medicine, 87*(12), 1762-1767. doi: 10.1097/ACM.0b013e318271fc82

Martinez-Moreno, E., Zornoza, A., Gonzalez-Navarro, P., & Thompson, L. F. (2012). Investigating face-to-face and virtual teamwork over time: When does early task conflict trigger relationship conflict? *Group Dynamics: Theory Research and Practice, 16*(3), 159-171. doi: 10.1037/a0029569

Merton, R. K., & Kendall, P. L. (1946). The focus interview. *American Journal of Sociology, 51*(6), 541-557. doi: 10.1086/269057

Morgan, D. L. (1996). Focus groups. *Annual Review of Sociology, 22*(1), 129-152. doi: 10.1146/annurev.soc.22.1.129

O'brien, R. (2007). A caution regarding rules of thumb for variance inflation factors. *Quality & Quantity, 41*(5), 673-690. doi: 10.1007/s11135-006-9018-6

Overbeek, I. (2012). *Conflict, work values congruence and lean team performance.* (Master), University of Twente.

Paletz, S. B. F., Schunn, C. D., & Kim, K. H. (2013). The interplay of conflict and analogy in multidisciplinary teams. *Cognition, 126*(1), 1-19. doi: 10.1016/j.cognition.2012.07.020

Pentland, A. (2012). The new science of building great teams. *Harvard Business Review*.

Reynolds, C. R., & Kamphaus, R. W. (2004). *Behavior Assessment Systems for Children* (2nd ed.). Circle Pines, MN: American Guidance System Publishing.

Rispens, S. (2012). The influence of conflict issue importance on the co-occurrence of task and relationship conflict in teams. *Applied Psychology-an International Review-Psychologie Appliquee-Revue Internationale, 61*(3), 349-367. doi: 10.1111/j.1464-0597.2011.00473.x

Roersen, M. J., Kraaijenbrink, J., & Groen, A. J. (in press). Marketing ignorance and the validity of Narver and Slater's MKTOR scale in high-tech Russian firms. *Journal of Product Innovation Management*.

Rothenberg, S. (2003). Knowledge content and worker participation in environmental management at NUMMI. *Journal of Management Studies, 40*(7), 1783-1802.

Schafer, M., & Crichlow, S. (1996). Antecedents of groupthink: A quantitative study. *Journal of Conflict Resolution, 40*(3), 415-435. doi: 10.1177/0022002796040003002

Schippers, M. C., Homan, A. C., & Van Knippenberg, D. (2013). To reflect or not to reflect: Prior team performance as a boundary condition of the effects of reflexivity on learning and final team performance. *Journal of Organizational Behavior, 34*(1), 6-23. doi: 10.1002/job.1784

Schoonhoven, C. B., & Jelinek, M. (1990). Dynamic tension in innovative, high technology firms: Managing rapid technological change through organizational structure *Managing Complexity in High Technology Organizations* (pp. 90-118). New York: Oxford University Press.

Schulte, M., Cohen, N. A., & Klein, K. J. (2012). The coevolution of network ties and perceptions of team psychological safety. *Organization Science, 23*(2), 564-581. doi: 10.1287/orsc.1100.0582

Shadish, W. R., Cook, T. D., & Campbell, D. T. (2001). *Experimental and quasi-experimental designs for generalized causal inference*. Boston: Houghton Mifflin.

Shah, P. P., & Jehn, K. A. (1993). Do friends perform better than acquaintances? The interaction of friendship, conflict, and task. *Group Decision and Negotiation, 2*, 149-165. doi: 10.1007/BF01884769

Siemsen, E., Roth, A. V., Balasubramanian, S., & Anand, G. (2009). The influence of psychological safety and confidence in knowledge on employee knowledge sharing. *M&Som-Manufacturing & Service Operations Management, 11*(3), 429-447. doi: 10.1287/msom.1080.0233

Simons, T. L., & Peterson, R. S. (2000). Task conflict and relationship conflict in top management teams: The pivotal role of intragroup trust. *Journal of Applied Psychology, 85*, 102-111. doi: 10.1037//0021-9010.85.1.102

Tidd, S. T., McIntyre, H. H., & Friedman, R. A. (2004). The importance of role ambiguity and trust in conflict perception: Unpacking the task conflict to relationship conflict linkage. *International Journal of Conflict Management, 15*(4), 364-380. doi: 10.1108/Eb022918

Van Der Weide, J. G. (2007). *Een exploratieve video-observatiestudie naar het gedrag van effectieve middenmanagers.* (PhD doctoral dissertation), University of Tilburg, Tilburg.

Van Dun, D., Wilderom, C., & Hoogeboom, A. M. G. (2013). *Decipering Lean Team Cultures: Leader Work Values, Information Sharing and Lean Team Effectiveness*. Working paper.

Van Dun, D. H., & Wilderom, C. P. M. (2012). Human dynamics and enablers of effective Lean team cultures and climates. *International Review of Industrial and Organizational Psychology, 27*, 115-152.

Walumbwa, F. O., & Schaubroeck, J. (2009). Leader personality traits and employee voice behavior: Mediating roles of ethical leadership and work group psychological safety. *Journal of Applied Psychology, 94*(5), 1275-1286. doi: 10.1037/a0015848

Weisbord, M. R. (2004). *Productive Workplaces Revisited, Dignity, Meaning and Community in the 21st Century* (2nd ed.). San Fransisco: Jossey-Bass Publishers.

Womack, J. P., & Jones, D. T. (2003). *Lean Thinking: Banish Waste and Create Wealth in Your Corporation*. New York: Simon & Schuster.

Zaccaro, S. J., Rittman, A. L., & Marks, M. A. (2001). Team leadership. *The Leadership Quarterly, 12*(4), 451-483. doi: 10.1016/S1048-9843(01)00093-5

Zijlstra, F. R. H., Waller, M., & Phillips, S. (2012). Setting the tone: Early interaction patterns in swift-starting teams as a predictor of effectiveness. *European Journal of Work and Organizational Psychology, 21*(5), 749-777. doi: 10.1080/1359432X.2012.690399

Appendix I: Pilot Delphi Round

This appendix presents the introduction and the questions used in the pilot version of the first Delphi round.

Welkom!
Hartstikke leuk dat je mee wilt doen aan dit onderzoek. Jullie input gebaseerd op kennis en ervaring op de werkvloer is essentieel voor mijn onderzoek en het eindproduct.

Met jullie input ga ik een observatie schema maken waarmee psychologische veiligheid geobserveerd kan worden. Wil je dat teams leren, ideeën uitwisselen, fouten toegeven en als een team leren hoe die fout niet meer te maken? Dan moeten de teamleden zich veilig voelen.

Psychologische veiligheid wordt gedefinieerd als “een gedeeld geloof dat het team veilig is om interpersoonlijke risico’s te nemen” (Edmondson, 1999) en “een werkomgeving waar medewerkers vrij zijn om op te spreken zonder afgewezen of bestraft te worden” (Baer & Frese, 2003).

Het probleem is dat psychologische veiligheid is niet met het blote oog zichtbaar is. Wat wel zichtbaar is zijn gedragingen die geuit worden, omdat een team zich psychologisch veilig voelt. Denk hierbij aan het in groepsverband toegeven van fouten of aandragen van verbeterideeën voor een proces.

Op basis van een literatuurstudie heb ik vier constructen geïdentificeerd die sterk gerelateerd zijn aan psychologische veiligheid: procesconflict, relatieconflict, taakconflict en informatie- en kennisdelen.

In deze enquête, bestaande uit acht open vragen, wil ik jullie vragen welke gedraging jullie op de werkvloer zien. Ieder construct wordt eerst kort uitgelegd en is vervolgens opgedeeld in twee vragen: wat duidt op aanwezigheid van dit construct, en wat duidt op de afwezigheid van dit construct? Iedere vraag wordt van twee voorbeelden voorzien.

Antwoorden mogen ook gegeven worden aan de hand van de voorbeelden (als die volgens jou van toepassing is) en een observatie mag bij meerdere constructen ingevuld worden.

1. Aanwezigheid van Relatieconflict

Relatieconflict wordt gedefinieerd als verschillen in niet taak gerelateerde persoonlijke standpunten en wederzijdse afkeer of irritaties tussen teamleden. Relatie conflicten gaan vaak over persoonlijkheid, sociale gebeurtenissen, politieke voorkeur, geloof, hobby's of persoonlijke stijl.

Mogelijke voorbeelden van relatieconflict zijn:

- Teamleden worden ontweken
- Er wordt over een teamlid geroddeld

Als je terugdenkt aan een relatieconflict op de werkvloer, welke gedragingen of concrete acties heb je toen gezien?

2. Afwezigheid van Relatieconflict

Relatieconflict wordt gedefinieerd als verschillen in niet taak gerelateerde persoonlijke standpunten en wederzijdse afkeer of irritaties tussen teamleden. Relatie conflicten gaan vaak over persoonlijkheid, sociale gebeurtenissen, politieke voorkeur, geloof, hobby's of persoonlijke stijl.

Mogelijke voorbeelden die duiden op de afwezigheid van relatieconflict zijn:

- Er wordt naar elkaar gelachen, schouderklopjes gegeven, etc.
- Als een teamlid met uitspraken over persoonlijke zaken een kwetsbare opstelling in het team nemen met het risico dat het tegen hem/haar kan worden gebruikt

Als je terugdenkt aan een moment op de werkvloer, welke gedragingen of concrete acties heb je toen gezien die duiden op de afwezigheid van relatieconflict?

3. Aanwezigheid van procesconflict

Procesconflicten zijn onenigheden over logistieke zaken en het verdelen van verantwoordelijkheden zoals hoe taken uitgevoerd moeten worden binnen het team, wie verantwoordelijk is voor wat en hoe taken verdeeld moeten worden.

Mogelijke voorbeelden van procesconflict zijn:

- Discussie wie verantwoordelijk is voor een taak
- Onenigheid over de volgorde waarin taken uitgevoerd moeten worden

Als je terugdenkt aan een procesconflict op de werkvloer, welke gedragingen of concrete acties heb je toen gezien?

4. Afwezigheid van Procesconflict

Procesconflicten zijn onenigheden over logistieke zaken en het verdelen van verantwoordelijkheden zoals hoe taken uitgevoerd moeten worden binnen het team, wie verantwoordelijk is voor wat en hoe taken verdeeld moeten worden.

Een mogelijk voorbeeld dat duidt op de afwezigheid van procesconflict is:

- Overleggen gaan niet over wie doet wat maar over de resultaten
- Bij een dienstwisseling weet iedereen wat van hem/haar verwacht wordt en kan meteen aan het werk

Als je terugdenkt aan een moment op de werkvloer, welke gedragingen of concrete acties heb je toen gezien die duiden op de afwezigheid van procesconflict?

5. Aanwezigheid van taakconflict

Taakconflicten zijn onenigheden tussen teamleden over de ideeën en meningen over de uit te voeren taken zoals welke cijfers in de verslaglegging mee te nemen of de huidige bedrijfsstrategie.

Mogelijke voorbeelden van taakconflict zijn:

- Welke KPI's of informatie in rapportage te verwerken
- Een team moet twee tegenstrijdige opdrachten uitvoeren en is in discussie welke opdracht de juiste is

Als je terugdenkt aan een taakconflict op de werkvloer, welke gedragingen of concrete acties heb je toen gezien?

6. Afwezigheid van Taakconflict

Taakconflicten zijn onenigheden tussen teamleden over de ideeën en meningen over de uit te voeren taken zoals welke cijfers in de verslaglegging mee te nemen of de huidige bedrijfsstrategie.

Mogelijke voorbeelden die duiden op de afwezigheid van taakconflict zijn:

- Iedereen voert dezelfde taak op de zelfde manier uit
- Er is geen discussie over de inhoud van taken

Als je terugdenkt aan een moment op de werkvloer, welke gedragingen of concrete acties heb je toen gezien die duiden op de afwezigheid van taakconflict?

7. Aanwezigheid van Informatie en kennisdelen

Informatie en kennisdelen is het bewust delen van informatie, kennis, vermoedens en ideeën. Dit kan zowel expliciete als ontastbare kennis zijn.

Expliciete kennis: concrete en duidelijke kennis wat makkelijk te delen is d.m.v. schrijven of uitleggen. Vaak op feiten gebaseerd (cijfers, productkennis, etc.)

Mogelijke voorbeelden van expliciete informatie & kennisdelen zijn:

- Omzet, verzuim, productiviteit cijfers delen
- Uitleggen hoe een nieuwe machine werkt

Ontastbare kennis: Kennis dat vaak ervaringen, cultuur of attituden bevat, zoals hoe het best een bepaalde klant te benaderen of het verschil tussen tekstboek kennis en praktijk kennis.

Mogelijke voorbeelden van ontastbare informatie & kennisdelen zijn:

- Geruchten over nieuwe markt kansen delen
- Uit ervaring uitleggen waarom een bepaalde dienst/proces niet gaat werken

Als je terugdenkt aan een moment van Informatie en kennisdelen op de werkvloer, welke gedragingen of concrete acties heb je toen gezien?

8. Afwezigheid van Informatie en kennisdelen

Informatie en kennisdelen is het bewust delen van informatie, kennis, vermoedens en ideeën. Dit kan zowel expliciete als ontastbare kennis zijn.

Expliciete kennis: concrete en duidelijke kennis wat makkelijk te delen is d.m.v. schrijven of uitleggen. Vaak op feiten gebaseerd (cijfers, productkennis, etc.)

Mogelijke voorbeelden die duiden op de afwezigheid van expliciete informatie en kennisdelen zijn:

- Kwartaal cijfers pas delen nadat er naar gevraagd wordt
- Nieuwe wetgeving die van invloed is op het werk pas delen als er een klacht over binnen is gekomen

Ontastbare kennis: Kennis dat vaak ervaringen, cultuur of attituden bevat, zoals hoe het best een bepaalde klant te benaderen of het verschil tussen tekstboek kennis en praktijk kennis.

Mogelijke voorbeelden die duiden op de afwezigheid van ontastbare informatie en kennisdelen zijn:

- Na een training geen nieuwe kennis of ervaring met het team bespreken
- Geruchten over een (markt/interne) ontwikkeling pas delen als er meer concrete informatie beschikbaar is

Als je terugdenkt aan een moment op de werkvloer, welke gedragingen of concrete acties heb je gezien die duiden op de afwezigheid (of te laat) delen van informatie en kennis?

9. Ben je een man of een vrouw?

10. Wat is je geboortejaar?

11. Wat is je beroep?

12. In welke sector ben je werkzaam?

13. Hoeveel jaar werkervaring heb je?

14. Hoe lang ben je bezig met team veranderingen op de werkvloer?

15. Heb je een OBM opleiding gevolgd of ben je daar mee bezig?

Met jou input ga ik een tweede en laatste enquête ronde houden waarin jou antwoorden en de antwoorden van anderen kunt beoordelen. Op basis van deze beoordeling wordt de eerste versie van het observatie schema ontwikkeld, jouw hulp is hierbij essentieel. Hoe meer beoordelingen hoe beter het uiteindelijke schema wordt.

Appendix II: Delphi Round 1

Here the observation scheme used in the first Delphi round is presented.

Naam:

Soort team (werkvloer, project of management):

Aantal teamleden:

Discussies, onenigheden en conflicten over relaties

Welk gedrag zie je als teamleden onenigheden hebben in persoonlijke standpunten, er wederzijdse afkeer is of irritaties zijn tussen teamleden? Dit o.a. kan over persoonlijkheid, sociale gebeurtenissen, geloof of hobbies gaan.

(bijv. ontwijken, schreeuwen, schelden, negeren, wegkijken, uitlachen, zondebok aanstellen, negatieve feedback)

Welk gedrag zie je als teamleden overeenkomsten hebben in persoonlijke standpunten, persoonlijke voorkeuren of interesses en het goed met elkaar kunnen vinden (dus hoe ze met elkaar omgaan als er geen discussies zijn)?

(bijv. lachen, elkaar uitnodigen naar feesten, in de pauzes bij elkaar zitten, schouderkloppen)

Discussies, onenigheden en conflicten over processen

Welk gedrag zie je als er binnen een team onenigheden zijn over logistieke zaken en de verdeling van verantwoordelijkheden?

(bijv. discussie over taakverdeling, ander de schuld geven voor onuitgevoerd werk, geen vaste procedures)

Welk gedrag zie je als er binnen een team de taken vloeiend op elkaar aansluiten en verantwoordelijkheden duidelijk verdeeld zijn?

(bijv. iedereen kent zijn plaats in het process, overleg is gericht op resultaten ipv taakverdeling)

Discussies, onenigheden en conflicten over taken

Welk gedrag zie je als er onenigheden zijn tussen teamleden over de ideeën en meningen over de uit te voeren taken?

(bijv. noodzaak van taak bespreken, discussie over conflicterende opdracht of interpretatie van wetgeving, nieuwe ideeën voor taak veranderingen inhoudelijk bekritiseren)

Welk gedrag zie je als teamleden het met elkaar eens zijn over welke taken uit te voeren en hoe deze uit te voeren?

(bijv. gestandardiseerd werken, complimenten over de uitvoering van taken)

Kennis- en Informatiedelen

Welk gedrag zie je als teamleden bewust informatie, kennis, vermoedens en ideeën met elkaar delen?

(bijv. gemaakte fout bespreken, jaarcijfers presenteren, marktkansen delen, vragen strellen, ideeën delen, aanmoedigen om nieuwe ideeën te presenteren, anderen overtuigen op basis van ervaring of intuitie)

Welk gedrag zie je als teamleden bewust informatie en kennis niet met elkaar delen of achterhouden?

(bijv. alleen in kleine sub-groepjes kennis delen, vermoedens pas delen als ze het zeker weten (lang wachten met delen))

Appendix III: Data Collection Delphi Round 1

This appendix presents the 280 collected behaviors from the first Delphi round. Behaviors were collected using the format presented in Appendix II. The first table presents demographic data of the observers and the setting in which the data is collected.

Demographic Data of Observers and Observational Setting

Observer	Age	Gender	Observational Setting	Team Members
1	33	Female	Workplace Team	7
2	33	Male	Workplace Team	18
3	22	Male	Project Team	7
4	41	Male	Project Team	6
5	29	Female	Workplace Team	10
6	32	Female	Management Team	9
7	31	Male	Management Team	8
8	26	Female	Project Team	4
9	32	Female	Project Team	3

Collected Observations

Category	Observer	Identified Behaviour (Dutch)
Information Sharing	1	Naast elkaar zitten
	1	sparring opzoeken door bij elkaar aan bureau te zitten en mee te kijken
	1	complimenteren
	1	afspraken worden ingepland om met elkaar te praten
	1	bestanden (procedures/werkwijzen/mails) worden naar elkaar verzonden
	1	in teammeetings komt kennisdeling op de agenda
	1	crosstraining wordt ingeregeld
	1	medewerkers kijken een dagdeel met elkaar mee om van elkaar te leren

Category	Observer	Identified Behaviour (Dutch)
Information Sharing	1	grapjes over elkaars werkwijze
	1	verschillen ontstaan in werkwijzen, iedereen doet het op zijn eigen manier
	3	notities maken
	3	aankijken
	3	verifieren
	3	samenvatten
	3	doorvragen
	3	niet opletten
	4	vragen stellen
	4	overpeinsend
	4	onderwerpen negeren
	4	geagiteerd
	4	onduidelijkheid
	5	teamleden vragen om hulp in het beantwooden van vragen en collega's helpen
	5	in dagstart probleem en oplossing toelichten
	5	teamleider deelt mededelingen met team
	5	teamleden zijn langer bezig met hun taken en die niet lukken terwijl anderen het rustig hebben
	5	ervaren teamleden beantwoorden de vragen van minder ervaren teamleden niet
	5	er wordt weinig gezegd door teamleden in dagstarts, ook bij problemen blijft het stil
	6	luisteren naar elkaar
	6	hulpvraag stellen en hulp aanbieden
	6	meedenken met de ander om te verbeteren
	6	geroesemoes in kleine groepjes

Category	Observer	Identified Behaviour (Dutch)
Information Sharing	6	inhoud niet plenair delen
	7	vragen stellen zonder verborgen mening
	7	niet-noodzakelijke informatie meenemen naar vergadering
	7	teamleider nodigt uit tot het delen van ervaringen
	8	feedback geven op wat de ander doet
	8	vragen om feedback
	8	vragen wat de ander vindt (toetsen)
	8	proberen te achterhalen waarom iemand iets op een andere manier doet
	8	veel mails; belletjes
	8	op eigen manier doen zonder bij anderen te kijken
	8	keer op keer hetzelfde doen zonder te leren van anderen
	8	dubbele versies ontwikkelen, herwerk, opnieuw ontwikkelen van bestaande dingen
	8	vage omschrijvingen weergeven
	8	mails sturen om dingen te achterhalen/checken of het is gebeurd/ controleren
	9	achterdocht
	9	irritatie
	9	"waarom heb je dat niet eerder verteld"
Relationship Conflict	1	Grappen maken over het onderwerp waarover onenigheid is
	1	Negeren, doen alsof je opmerkingen niet hoort
	1	Afzeiken -> Negatieve opmerkingen maken n.a.v. het onderwerp
	1	Overdrijven/Opblazen-> Onderwerp uitkauwen en doorzagen
	1	Samen roken

Category	Observer	Identified Behaviour (Dutch)
Relationship Conflict	1	Fysiek Contact
	1	Bij elkaar aan bureau gaan zitten met kop koffie
	1	Privé-ervaringen delen (bijv. vakantieverhalen)
	1	Koffie voor elkaar halen
	1	Samen wandelingetjes maken buiten
	1	Samen Lunchen
	2	Trillende stem
	2	Snel praten
	2	Luid praten
	3	Defensieve opmerkingen maken
	3	niet reageren als iemand een probleem aankaart
	3	enthousiaste gebaren van een teamlide kleinerend/koel beantwoorden
	3	eigen negatieve punten als feitelijk lijstje presenteren
	3	niet aankijken bij geven en krijgen van feedback
	3	achterover leunen / afstand nemen van gesprek
	3	niks zeggen bij een confrontatie
	3	feedback vertalen naar grapjes
	3	vragen naar feedback
	3	elkaar bij feedback aankijken en bedanken
	4	Stelling nemen
	4	suggestieve vragen stellen
	4	beoordelen (nee.. Maar…)
	4	Gehaast praten, uit balans praten
	4	Armen over elkaar
	4	naar achteren schuiven

Category	Observer	Identified Behaviour (Dutch)
Relationship Conflict	4	Elkaar aanvullen/met elkaar eens zijn
	4	knikken, dichter naar elkaar schuiven
	5	stoel naar achteren schuiven
	5	gesloten lichaamshouding
	5	zeggen: "dat is jou mening"
	5	zeggen: "karakters veranderen niet"
	5	zeggen: "blijkbaar vind je het niet belangrijk genoeg"
	5	na vergaderingen verder praten bij toilet/koffie
	5	onderling grappen maken
	5	vragen naar privégebeurtenissen
	5	elkaar aankijken
	5	naar elkaar seinen in vergaderingen
	5	knikken als de ander praat
	6	Discussie voeren
	6	rechtop in stoel zitten
	6	stemverheffing
	6	luisteren
	6	herhalen/samenvatten wat de ander zei
	6	lachen
	7	grapjes maken over iets waar hij het niet mee eens is
	7	onderling grappen maken
	7	teammanager niet aanwezig bij gesprekken omdat hij het niet belangrijk vindt
	7	lachen, grappen maken
	7	samen hetzelfde standpunt kiezen in overleg
	7	op elkaar doorbouwen en aanvullen in vragen richting leidinggevende

Category	Observer	Identified Behaviour (Dutch)
Relationship Conflict	7	samen lunchen
	8	Er wordt niet naar persoonlijke dingen gevraagd of overheen gepraat
	8	Afhaken in een gesprek, zowel expliciet (weglopen) als impliciet (niet luisteren)
	8	elkaar aanvullen
	8	doorvragen, aanmoedigen om te vertellen
	8	op gesprek doorpakken met eigen ervaring (aanvullen)
	8	anekdotes vertellen
	8	ja knikken
	8	grapjes maken
	9	Grote handgebaren
	9	Harder stemgeluid
	9	Veel met elkaar omgaan
	9	Praten veel over dezelfde standpunten
Task & Process Conflict	2	nagels schoonmaken
	2	stemverheffing
	2	rood aanlopen
	2	nee-schudden
	2	geroesemoes in de zaal
	2	onderuitgezakt gaan zitten
	2	naar buiten gaan kijken of wegkijken
	2	ja, ja zeggen
	2	veel mensen bewegen op hun stoel en/of gaan verzitten
	2	snel praten (agressie in het team)
	2	wenkbrauwen naar beneden
	2	wijzen

Category	Observer	Identified Behaviour (Dutch)
Task & Process Conflict	2	veel gebaren (handen heen en weer bewegen
	7	discussieren
	7	mails sturen na het overleg over "nieuwe inzichten"-> na overleg pas mening geven
	7	taken en verantwoordelijkheden bij iemand anders proberen neer te leggen
Task Conflict	1	meningen niet direct delen / koffieautomaat geeft werkelijke standpunten bloot
	1	coalitie zoeken met dezelfde mening / wij-zij taal
	1	Pas uitspreken als het heel hoog zit
	1	rust in het team, iedereen aan het werk
	1	schakelen met elkaar, taken worden opgepakt
	1	fluiten
	1	radio gaat aan
	3	bij te maken beslissingen niks zeggen
	3	afspraken lopen vertraging op door gebrek aan urgentie besef
	3	smoesjes bedenken waarom iets niet gedaan is
	3	verbeter ideeën aandragen
	3	resultaten achteraf evalueren zonder inhoudelijke discussie
	4	voorstellen doen
	4	testen (zo zit het toch?)/verifieren
	4	door elkaar praten/afkappen/slecht luisteren
	4	oordelen over andermans input
	4	aanmoedigen
	5	vragen aan anderen wat hij/zij moet doen
	5	hardop zeggen geen zin te hebben in de opgegeven taak

Category	Observer	Identified Behaviour (Dutch)
Task Conflict	5	stil blijven als er naar hun mening wordt gevraagd
	5	rust op de werkvloer/ mensen werken rustig door
	6	door elkaar praten
	6	verantwoordelijkheden bij anderen neerleggen
	6	weinig praten maar aan het werk
	7	meer kleine grappen/lachen
	7	sneller overleggen / minder vragen/opmerkingen
	8	verkondigen en herhalen van standpunten
	8	niet goed luisteren naar ideeën van anderen-> overheen praten
	8	veel ja maar…
	8	lange discussies zonder besluit
	8	doorbouwen en aanvullen van elkaar
	8	veel ja en…
	8	snelheid in besluiten nemen, knopen worden doorgehakt
	9	nieuwe ideeën stuiten op weerstand
	9	experimenteren met nieuwe ideeën niet toegestaan
	9	soepele vergaderingen
	9	geen discussies
	9	snel to the point komen
	9	plezierige samenwerking
Process Conflict	1	Grijpen naar procedures en afspraken
	1	Dat wat op papier staat heilig verklaren
	1	Grootste mond / hardste schreeuwer wint
	1	Opnieuw gaan definiëren van rollen en taken
	1	Discussie over de definities van bepaalde taken

Category	Observer	Identified Behaviour (Dutch)
Process Conflict	1	Elkaar overtreffen in prestaties/ competities aangaan met elkaar
	1	Meer lolletjes en momenten van onstpanning
	1	Meer nadenken over verbetermogelijkheden om nog slimmer en sneller te werken
	1	actief eigen werkwijze aan de orde stellen
	1	openlijk bespreken hoe de taken slimmer en sneller uit te voeren
	3	opmerkingen als "er later op terugkomen"
	3	niet duidelijk wie je aan kunt spreken
	3	afspraken worden niet nagekomen
	3	probleem erkennen zonder dat iemand een oplossing probeert te vinden
	3	voortgang, status of afronding van taak onduidelijk binnen team
	3	niet weten waar de ander mee bezig is
	4	andere werkzaamheden/projecten de schuld geven voor vertraging/problemen
	4	terugkomen op gemaakte afspraken
	4	andere gezichtspunten aangeven (ik zie dat anders…)
	4	afhaken/onderuit zakken
	4	actie zelf oppakken (taken naar zich tetrekken)
	4	hulpvraag stellen en hulp aanbieden
	4	geen aandacht aan taken en verantwoordelijkheden
	4	luisteren
	5	aangeven dat je je eigen werk goed doet en geen extra taken hoeft
	5	verdedigen dat je nooit klachten krijgt over je werk
	5	zeggen: "dan mag je me meer gaan betalen teamleider"

Category	Observer	Identified Behaviour (Dutch)
Process Conflict	5	teamleden delen verbeterideeën over werk organisatie op de muur
	5	teamleden wijzen elkaar op ieders verantwoordelijkheden
	5	teamleden maken grappen tijdens het werk
	5	teamleden werken naast elkaar zonder te praten over werk
	5	er heerst rust op de werkvloer/mensen werken rustig door
	5	teamleden houden in de uitvoering van het werk vast aan processstandaarden
	6	wegduiken voor verantwoordelijkheid
	6	elkaar aankijken
	6	niks zeggen
	6	voorzitter moet voortouw nemen in beslissingen maken
	6	kort overleg
	6	actiegericht beslissingen nemen
	8	naar elkaar wijzen
	8	ervan uitgaan dat de ander het doet
	8	geirriteerd reageren als de ander het niet heeft opgepakt of uitgevoerd zoals verwacht
	8	er wordt veel over het proces gepraat, aangepast en bijgestuurd
	8	elkaar helpen, actief hulp bieden
	8	gesprekken over het proces gaan snel, gesprek gaat over resultaten
	9	zeggen "jij zei toch; je had toch beloofd; dat was jou taak"
	9	op onderzoek gaan waar het vandaan komt
	9	iedereen kent verantwoordelijkheden

Category	Observer	Identified Behaviour (Dutch)
Process Conflict	9	praat in dezelfde taal
	9	overleg gaat soepel
	9	rollen in het team zijn goed verdeeld

Besides the data collected through observations, data is also collected through the an interview with two male consultants of 39 and 47 years old. The interview lasted 48 minutes. Although attempted, the interview did not provide behaviors classified into the constructs information sharing, relationship-, task-, and process conflict. The list of non-categorized behaviors is presented in the table below. A full transcription of the interview is available at the main author.

Behaviors Collected During the Interview

Behaviors
men het niet uit naar de leidinggevende
leidinggevende zegt niks om maar ruimte te geven
iets accepteren omdat je het gewend bent van iemand maar het niet eens bent
achteraf terugkrabbelen
ja zeggen vanuit een groepsdruk
zeggen dat teamleden vrijheid hebben om te kiezen maar toch druk zetten
teamleden voelen zich gedwongen om ja te zeggen
geen hulp (durven) vragen
zeggen dat je iets niet prettig vind
mensen haken af in een gesprek
iemand anders proberen te overtuigen
continu ja maar..
stemverheffing
niet goed voorbereid naar vergadering komen
sturende/gesloten/suggestieve vragen stellen

Behaviors
Defensieve opmerkingen maken
naar voren zitten
elebogen op tafel
dreigend in de ogen kijken
onderzoekende vragen stellen / niet suggestief
zienswijzen uitwisselen om van elkaar te leren
allemaal je eigen ding roepen ipv de agenda aanhouden
niet uitspreken tot je weet wat de rest denkt
tijdens een vergadering vindt er een dialoog tussen 2 mensen plaats
teamleden zeggen niks om zich niet te mengen in het conflict
over de taak (probleem) praten
iemand aanspreken op waarom die persoon een taak fout heeft gedaan
waarom over iemand -> op het matje roepen/schuld geven
waarom over proces.taak/omstandigheden
teamleden kappen conflict af en brengen het terug naar daarwerkelijke onderwerp
over de toekomst praten ipv in het verleden praten
teamleden kijken naar de leider om in te grijpen bij een conflict
ingrijpen gebeurt op agenda of inhoud ipv op persoon of proces
complimenteren
aanmoedigen
afhaken van gesprek (voorbereiden tijdens vergaderingen)
spullen niet mee voor vergadering
opdracht geven maar verwachtingen zijn onduidelijk
niet doorvragen bij onduidelijkheid
idee aandragen leidt tot actie / acties benoemen wordt zelf uitvoeren

Behaviors
te laat komen / niet verschijnen als teken dat je het er niet mee eens bent
vergaderingen sabotteren
eten en drinken tijdens vergadering
op de laptop tijdens vergadering/ telefoon
weglopen om te bellen
paar mensen altijd aan het woord
mensen die achterover leunen
mensen vragen niet
in een dagstart bij een onderwerp blijven hangen
dagstart leider alleen maar praat en de rest niet
op afgesloten agendapunten terugvallen
interesse in de mening van een ander
luisteren
mensen luisteren niet maar verkondigen alleen eigen mening
erkenning geven aan wat net gezegd is
antwoord geven op niet gestelde vraag
vragen beantwoorden voor iemand anders

Appendix IV: Results Delphi Round 1

The 53 behaviors used as input for the second Delphi round are presented below. The frequencies correspond to the amount of individual behaviors aggregated into each behavior. Total amount of behaviors is 53, with a counted frequency of 213.

Behaviors included in the Second Delphi Round

	Frequency						
Included behaviors	Relationships	Tasks	Processes	Task & Process	Information Sharing	Not classified	Total counts
1. Teamleden ogen afgeleid, verveeld of ongeïnteresseerd	0	0	1	3	1	3	8
2. Teamleden gedragen zich ontspannen	4	5	3	0	0	0	12
3. Teamleden praten of seinen onderling tijdens vergaderingen en delen dit niet met de rest van de groep	2	0	0	1	2	0	5
4. Teamleden kijken elkaar niet aan bij het geven of nemen van feedback	2	0	0	0	0	0	2
5. Teamleden tonen agressie of boosheid in hun lichaamstaal of houding	3	0	0	3	0	2	8
6. Teamleden wijzen elkaar op ieders verantwoordelijkheden	0	0	3	0	0	1	4
7. Teamleden stellen hun eigen werkwijze of problemen aan de orde en zoeken samen naar verbetermogelijkheden	0	1	4	1	1	1	8
8. Teamleden leggen verantwoordelijkheden bij collega's neer	0	1	2	1	0	1	5
9. Teamleden werken volgens vaste procedures	0	0	1	0	0	0	1
10. Teamleden ontkennen eigen fouten of slecht werk	0	0	1	0	0	0	1
11. Teamleden geven collega's die het hardste schreeuwen de aandacht	0	0	1	0	0	0	1
12. Teamleden zijn onvoorbereid of afwezig bij een teamgesprek	1	0	0	0	0	4	5

	Frequency						
Included behaviors	Relationships	Tasks	Processes	Task & Process	Information Sharing	Not classified	Total counts
13. Teamleden nemen fysiek afstand van het gesprek	5	0	0	1	0	1	7
14. Teamleden vragen om hulp of bieden hulp aan	0	0	2	0	2	0	4
15. Teamleden helpen (elkaar) niet actief te zoeken naar een oplossing voor erkende problemen	0	0	1	0	1	1	3
16. Teamleden delen hun meningen niet direct in een vergadering	1	3	0	1	0	2	7
17. Teamleden hebben afwijkende werkwijzes (zonder naar collega's te kijken)	0	0	0	0	4	0	4
18. Teamleden tonen hun emoties niet (bijv. eigen verbeterpunten zo feitelijk mogelijk presenteren)	1	0	0	0	0	0	1
19. Teamleden bespreken individuele prestaties met elkaar	0	1	1	0	0	0	2
20. Teamleden geven en vragen elkaar om feedback	1	0	0	0	3	0	4
21. Teamleden tonen agressie of boosheid in hun stem (bijv. snel praten, trillende stem of stemverheffen)	5	0	0	2	0	2	9
22. Teamleden maken grappen over het onderwerp waarover onenigheid is of over elkaars werkwijze	2	0	0	0	1	0	3
23. Teamleden beantwoorden enthousiasme van een collega koel of ongeïnteresseerd	1	0	0	0	0	0	1
24. Teamleden geven andere teamleden of projecten de schuld voor foutgelopen of niet nagekomen afspraken	0	1	1	0	0	0	2
25. Teamleden gaan bij elkaar (aan een bureau) zitten om kort iets te bespreken	1	0	0	0	2	0	3

Included behaviors	Frequency						
	Relationships	Tasks	Processes	Task & Process	Information Sharing	Not classified	Total counts
26. Teamleden zijn het met elkaar eens (bijv. elkaar aanvullen of knikken)	4	2	0	0	0	0	6
27. Teamleden delen privé ervaringen met elkaar of vragen ernaar	2	0	0	0	0	0	2
28. Teamleden maken discussies over verantwoordelijkheden persoonlijk (bijv. wijzen)	0	0	1	1	0	0	2
29. Teamleden praten niet over persoonlijke dingen met elkaar	2	0	0	0	0	0	2
30. Team leden houden vast aan/ grijpen naar (geschreven) procedures en eerder gemaakte afspraken	0	0	2	0	0	0	2
31. Teamleden verzetten zich tegen of laten zich negatief uit over het uitvoeren van een taak	0	1	2	0	0	0	3
32. Teamleden reageren negatief of afwijzend op ideeën en meningen van een ander	1	3	0	0	0	0	4
33. Teamleden houden samen informele pauze momenten (bijv. roken, lunch of koffie)	7	0	0	0	0	0	7
34. Teamleden stellen elkaar open vragen (zonder verborgen mening)	0	0	0	0	1	1	2
35. Teamleden luisteren actief naar elkaar (bijv. verifieren, doorvragen, samenvatten, notities maken)	4	1	1	0	7	2	15
36. Teamleden benaderen elkaar enthousiast (bijv. groeten, complimenteren, bedanken of aanmoedigen)	0	1	0	0	1	2	4
37. Teamleden nemen een (afwijkend) standpunt in	1	0	1	0	0	0	2
38. Teamleden maken grappen over eerder gegeven feedback	1	0	0	0	0	0	1

	Frequency						
Included behaviors	Relationships	Tasks	Processes	Task & Process	Information Sharing	Not classified	Total counts
39. Teamleden negeren of reageren niet op confrontaties, opmerkingen of problemen	3	1	0	0	2	0	6
40. Teamleden definiëren opnieuw rollen en taken of discussieren over de definitie van taken	0	0	2	0	0	0	2
41. Teamleden komen afspraken niet na of stellen ze uit	0	1	2	0	0	1	4
42. Teamleden delen procedures, werkwijzes, ervaringen, oplossingen en nieuwe kennis	1	0	1	0	10	1	13
43. Teamleden stellen gesloten vragen	1	0	0	0	0	1	2
44. Teamleden vragen na wat er gedaan is	0	1	2	0	1	0	4
45. Teamleden luisteren niet naar elkaar (bijv. door elkaar praten, afkappen of overheenpraten)	1	3	0	0	0	0	4
46. Teamleden blijven hun eigen standpunt herhalen zonder tot besluiten te komen	0	1	0	0	0	2	3
47. Teamleden doen dubbel of onnodig werk	0	0	1	0	1	0	2
48. Teamleden geven aan zich ergens niet prettig bij te voelen	0	0	0	0	0	1	1
49. Tijdens een vergadering praten een paar teamleden intensief met elkaar en de rest niet	0	0	0	0	0	2	2
50. Teamleden kijken weg of kijken naar de teamleider bij een conflict tussen collega's	0	0	0	0	0	2	2
51. Bij een vergadering is alleen de teamleider aan het woord of er wordt slechts één agendapunt geadresseerd	0	0	0	0	0	3	3
52. Teamleden geven erkenning aan wat gezegd is	0	0	0	0	0	1	1
53. Teamleden antwoorden voor iemand anders	0	0	0	0	0	2	2
Total:	57	27	36	14	40	39	213

Appendix V: Delphi Round 2

Below the introduction, questions and responses of the second Delphi round are presented.

Welkom!

Fijn dat u mee wilt helpen aan mijn onderzoek. Als afstudeerder bij House of Performance ben ik bezig met een observatieschema maken waarmee psychologische veiligheid in werkvloer teams geobserveerd kan worden. Met uw antwoorden op deze vragenlijst ontwikkel en test ik een eerste versie van het observatieschema.

Waarom psychologische veiligheid observeren?

Psychologische veiligheid is essentieel voor leren en verbeteren in teams. Maar hoe zie je of een team(lid) zich veilig voelt? In dit onderzoek zoek ik naar gedrag dat aangeeft of een team zich wel of niet veilig voelt. Adviseurs van House of Performance hebben mij aan een lange lijst gedragingen geholpen, nu vraag ik u om deze gedragingen te classificeren en beoordelen op basis van uw kennis en ervaring met teams.

Succes en alvast bedankt voor uw medewerking!

Hieronder is een lijst met 27 gedragingen die in teams geobserveerd zijn door adviseurs van House of Performance. Om het observatieschema dat ik aan het ontwikkelen ben bruikbaar te maken moet het aantal gedragingen worden beperkt tot ca. 20, dit zijn er nu nog 53. Daarom wil ik jullie vragen om de onderstaande gedragingen te classificeren en beoordelen.

Per gedrag stel ik telkens vijf vragen die op een schaal van helemaal niet van toepassing tot helemaal van toepassing beoordeeld moeten worden. Dit zijn drie vragen over gedrags categorieën en twee over observeerbaarheid en relevantie op de werkvloer. De vijf vragen staan hieronder met een uitleg van ieder thema. Gedrag kan zowel positief als negatief aan een categorie relateren, bijvoorbeeld: schelden op elkaar en lachen kan allebei sterk aan relaties relateren.

De vijf vaste vragen	**Definities/Uitleg**
Dit gedrag heeft invloed op persoonlijke (niet werk-gerelateerde) RELATIES tussen teamleden	Relaties: Hierin valt alle gedrag dat duidt op overeenkomsten of verschillen in persoonlijke standpunten, persoonlijkheid of voorkeuren. Dit kan wederzijdse afkeer, irritaties, interesses of hobby's zijn. Relaties gaan per definitie niet over taken en gedrag kan zowel positief als negatief zijn.
Dit gedrag heeft invloed op de inhoud en uitvoering van TAKEN en PROCESSEN	Taken en Processen: Hierin valt alle gedrag dat duidt op overeenkomsten of onenigheden over logistieke kwesties, de verdeling van taken en verantwoordelijkheden of ideeën en meningen over de inhoud of interpretatie van de uit te voeren taken. Taken en processen zijn per definitie van belang voor het resultaat van het team.
Dit gedrag heeft invloed op het INFORMATIE en KENNISDELEN binnen het team	Informatie en Kennisdelen: het wel of niet bewust delen van informatie, kennis, vermoedens en ideeën met elkaar. Een dialoog over nieuwe technologische ontwikkelingen in de markt valt onder informatie en kennisdelen.
Dit gedrag komt voor in WERKVLOER TEAMS	Werkvloer teams: Duidelijk afgebakende medewerker teams die elkaar regelmatig (dagelijks of wekelijks) ontmoeten. Daarnaast zijn ze samen verantwoordelijk voor het produceren van goederen of leveren van diensten en zijn ze als team een onderdeel van een grotere organisatie.
Dit gedrag kan ik met het blote oog OBSERVEREN	Observeerbaar gedrag: Verbaal en non-verbaal gedrag dat waargenomen kan worden met het blote oog binnen een team.

Questions Version A	Relationships		Tasks and Processes		Information Sharing		Workplace Teams		Observable	
	M	SD	M	SD	M	SD	M	SD	M	SD
1. Teamleden ogen afgeleid. verveeld of ongeïnteresseerd	3.83	1.11	3.75	1.14	3.83	0.83	4.17	1.11	4.58	0.67
2. Teamleden gedragen zich ontspannen	4.33	0.78	3.83	0.94	3.42	1.24	4.42	0.67	4.50	1.00
3. Teamleden praten of seinen onderling tijdens vergaderingen en delen dit niet met de rest van de groep	4.33	0.89	3.08	1.31	4.00	0.85	4.17	0.94	4.42	1.00
4. Teamleden kijken elkaar niet aan bij het geven of nemen van feedback	4.17	0.72	3.17	1.11	3.75	0.87	3.92	1.00	4.25	1.06
5. Teamleden tonen agressie of boosheid in hun lichaamstaal of houding	4.58	0.67	4.00	1.04	3.92	1.16	3.75	1.14	4.50	0.52
6. Teamleden wijzen elkaar op ieders verantwoordelijkheden	3.67	0.89	4.00	0.74	3.33	0.98	3.67	1.07	3.67	1.23
7. Teamleden stellen hun eigen werkwijze of problemen aan de orde en zoeken samen naar verbetermogelijkheden	3.50	1.00	4.25	0.45	4.50	0.52	3.33	1.15	3.58	0.90
8. Teamleden leggen verantwoordelijkheden bij collega's neer	3.58	0.67	3.92	0.67	3.25	0.97	3.67	0.98	2.58	0.90
9. Teamleden werken volgens vaste procedures	2.42	0.90	4.42	0.67	3.00	1.04	4.08	0.90	3.00	0.95
10. Teamleden ontkennen eigen fouten of slecht werk	4.17	0.72	4.08	1.00	4.08	1.00	3.75	0.97	3.17	1.40
11. Teamleden geven harde schreeuwers de aandacht	4.42	0.67	3.33	1.23	4.25	0.87	4.33	0.89	4.33	0.89
12. Teamleden zijn onvoorbereid of afwezig bij een teamgesprek	3.75	0.87	3.83	1.03	4.27	0.90	4.08	1.00	3.67	0.98
13. Teamleden nemen fysiek afstand van het gesprek	4.17	0.58	2.92	0.67	3.58	0.79	4.08	0.90	4.17	0.94
14. Teamleden vragen om hulp of bieden hulp aan	4.25	0.62	4.25	0.45	4.25	0.75	3.67	1.07	3.67	1.07
15. Teamleden helpen (elkaar) niet actief te zoeken naar een oplossing voor erkende problemen	3.67	0.98	3.92	0.90	4.08	1.00	3.83	0.94	2.58	1.08

Questions Version A (continued)	Relationships		Tasks and Processes		Information Sharing		Workplace Teams		Observable	
	M	SD	M	SD	M	SD	M	SD	M	SD
16. Teamleden delen hun meningen niet direct in een vergadering	3.75	0.75	3.33	0.98	4.17	0.83	4.33	0.49	3.17	1.11
17. Teamleden hebben afwijkende werkwijzes (zonder naar collega's te kijken)	2.67	0.65	4.42	0.67	3.83	1.19	3.92	1.00	3.08	0.90
18. Teamleden tonen hun emoties niet (bijv. eigen verbeterpunten zo feitelijk mogelijk presenteren)	3.58	1.08	3.08	1.00	2.83	1.11	3.92	1.00	3.25	1.14
19. Teamleden bespreken individuele prestaties met elkaar	3.50	0.80	3.75	0.87	4.50	0.67	3.42	1.16	3.50	1.17
20. Teamleden geven en vragen elkaar om feedback	4.33	0.49	4.17	0.39	4.42	0.90	3.17	1.27	3.83	1.03
21. Teamleden tonen agressie of boosheid in hun stem (bijv. snel praten. trillende stem of stemverheffen)	4.25	0.62	2.92	0.79	3.50	0.90	3.58	1.00	4.08	0.90
22. Teamleden maken grappen over het onderwerp waarover onenigheid is of over elkaars werkwijze	4.25	0.97	3.00	0.85	3.33	1.37	3.92	0.79	3.83	0.94
23. Teamleden beantwoorden enthousiasme van een collega koel of ongeïnteresseerd	4.50	0.52	2.92	1.08	3.92	1.08	3.75	0.97	3.42	1.08
24. Teamleden geven andere teamleden of projecten de schuld voor foutgelopen of niet nagekomen afspraken	4.42	0.67	4.00	0.85	4.08	1.00	3.75	0.97	3.67	1.30
25. Teamleden gaan bij elkaar (aan een bureau) zitten om kort iets te bespreken	3.92	0.79	4.00	0.95	4.25	0.75	4.00	0.85	4.08	1.00
26. Teamleden zijn het met elkaar eens (bijv. elkaar aanvullen of knikken)	4.08	0.67	3.58	0.79	3.58	0.67	3.75	0.97	3.92	0.79
27. Teamleden delen privé ervaringen met elkaar of vragen ernaar	4.92	0.29	2.67	0.89	3.50	1.09	3.92	1.00	3.08	1.31

Questions Version B	Relationships		Tasks and Processes		Information Sharing		Workplace Teams		Observable	
	M	SD	M	SD	M	SD	M	SD	M	SD
1. Teamleden maken discussies over verantwoordelijkheden persoonlijk (bijv. wijzen)	4.17	0.83	3.33	0.78	3.09	1.14	3.50	0.80	4.00	0.95
2. Teamleden praten niet over persoonlijke dingen met elkaar	4.42	0.67	2.25	0.75	2.67	1.07	3.33	0.89	2.83	1.11
3. Team leden houden vast aan/ grijpen naar (geschreven) procedures en eerder gemaakte afspraken	2.58	1.44	4.25	0.62	3.17	1.03	3.42	0.79	3.42	0.90
4. Teamleden verzetten zich tegen of laten zich negatief uit over het uitvoeren van een taak	3.25	1.22	4.25	0.97	3.45	1.04	3.75	0.62	4.00	0.43
5. Teamleden reageren negatief of afwijzend op ideeën en meningen van een ander	4.00	0.85	3.08	0.79	3.75	0.97	3.75	0.87	4.08	0.90
6. Teamleden houden samen informele pauze momenten (bijv. roken. lunch of koffie)	4.33	0.89	2.92	1.08	3.75	1.29	4.08	0.90	4.33	0.89
7. Teamleden stellen elkaar open vragen (zonder verborgen mening)	3.50	1.51	3.67	0.98	4.25	0.62	2.92	0.67	3.83	0.94
8. Teamleden luisteren actief naar elkaar (bijv. verifieren. doorvragen. samenvatten. notities maken)	3.92	1.16	3.75	0.87	4.25	0.62	2.83	0.72	3.50	1.00
9. Teamleden benaderen elkaar enthousiast (bijv. groeten. complimenteren. bedanken of aanmoedigen)	4.58	0.51	3.42	0.79	3.33	0.78	3.17	0.83	3.92	0.79
10. Teamleden nemen een (afwijkend) standpunt in	3.33	1.37	3.33	0.78	3.50	0.52	3.17	0.72	3.33	0.98
11. Teamleden maken grappen over eerder gegeven feedback	4.08	1.08	3.08	1.08	3.50	1.09	3.33	0.78	3.33	1.07
12. Teamleden negeren of reageren niet op confrontaties. opmerkingen of aangekaarte problemen	3.92	1.08	3.58	0.79	3.92	0.90	3.50	0.52	3.00	1.04

Questions Version B (continued)	Relationships		Tasks and Processes		Information Sharing		Workplace Teams		Observable	
	M	SD	M	SD	M	SD	M	SD	M	SD
13. Teamleden definiëren opnieuw rollen en taken of discussieren over de definitie van taken	2.58	1.00	4.17	0.94	3.25	0.75	3.17	0.83	3.50	0.80
14. Teamleden komen afspraken niet na of stellen ze uit	3.67	1.07	4.42	0.51	2.75	0.75	3.50	0.80	3.00	1.13
15. Teamleden delen procedures. werkwijzes. ervaringen. oplossingen en nieuwe kennis met elkaar	3.25	1.42	4.17	0.83	4.50	0.90	3.08	0.79	3.83	0.83
16. Teamleden stellen gesloten vragen met een mening	3.42	1.00	2.92	0.67	3.42	0.90	3.58	0.79	3.33	0.89
17. Teamleden doen navraag over wat er gedaan is	2.67	1.37	3.67	1.23	3.75	1.06	2.92	0.67	3.08	1.08
18. Teamleden luisteren niet naar elkaar (bijv. door elkaar praten. afkappen of overheenpraten)	4.00	0.85	3.25	0.87	4.00	0.74	3.25	0.62	3.50	0.90
19. Teamleden blijven hun eigen standpunt herhalen	3.42	1.16	3.92	0.79	3.25	0.75	3.42	0.67	3.33	0.78
20. Teamleden doen dubbel of onnodig werk	1.92	0.67	4.25	0.62	2.75	1.36	3.58	0.67	2.92	1.24
21. Teamleden geven aan zich ergens niet prettig bij te voelen	4.17	0.83	2.92	0.67	3.08	1.00	2.92	0.79	3.42	0.90
22. Tijdens een vergadering praten een paar teamleden intensief met elkaar terwijl de rest niet meedoet	3.58	1.00	2.92	0.67	4.00	0.74	3.33	0.78	4.17	0.39
23. Teamleden kijken weg of kijken naar de teamleider bij een conflict tussen collega's	3.83	1.03	2.67	0.78	2.92	0.90	3.33	0.78	4.08	0.90
24. Bij een vergadering is alleen de teamleider aan het woord of er wordt slechts één agendapunt geadresseerd	3.08	1.24	3.08	0.79	4.25	0.97	3.08	0.90	4.42	0.67
25. Teamleden geven erkenning aan wat er gezegd is	4.17	0.58	2.92	0.79	3.92	0.67	3.00	0.74	3.42	0.90
26. Teamleden antwoorden voor iemand anders	3.50	1.09	2.67	0.78	3.17	0.72	3.00	0.74	3.33	1.15

Appendix VI: Observation Scheme

The first version of the observation scheme used in the pilot field observation is presented below.

Gedragingen van Teamleden	Aantal keer geobserveerd
Goede Sfeer	
Ontspannen gedrag ***(Grappen maken; fluiten)***	
Persoonlijke aandacht ***(Privé dingen bespreken)***	
Enthousiasme ***(groeten, complimenteren, bedanken)***	
Eens zijn ***(ja zeggen, knikken)***	
Defensief of ontwijkend gedrag	
Agressie ***(stemverheffing, rood worden, grote gebaren)***	
Gesloten lichaamshouding ***(armen over elkaar, achterover leunen, stap achteruit)***	
Confrontatie ontwijken ***(niet reageren op problemen/confrontatie)***	
Verzetten tegen taak ***(negatief uitlaten over uit te voeren taak)***	
Verantwoordelijkheden	
Op verantwoordelijkheid wijzen	
Schuld afschuiven ***(oorzaak eigen tekortkoming bij ander leggen)***	
Fouten/slecht werk ontkennen ***(tekortkoming ontkennen)***	
Afspraken niet nakomen/uitstellen ***(verantwoordelijkheid nemen, schuld erkennen)***	
Feedback	
Actief luisteren ***(verifiëren, samenvatten, etc.)***	
Onderbreken ***(afkappen, overheen praten, etc.)***	
Feedback ***(geven & vragen, positief & negatief)***	
Niet aankijken bij feedback	
Grappen over onenigheid ***(over feedback of discussiepunten grap maken)***	
Enthousiasme koel beantwoorden ***(niet, koel of ongeïnteresseerd reageren)***	
Kennisdelen en Werkwijzen	

Open vraag stellen*(zonder verborgen mening)*

Hulp vragen of aanbieden

Sparren / kort overleggen

Zoeken naar verbetermogelijkheden*(eigen werkwijze bespreken, samen oplossingen zoeken)*

Resultaten bespreken en vergelijken*(individuele resultaten vergelijken)*

Werkwijzen, ervaringen en nieuwe kennis delen*(incl. procedures en oplossingen)*

Negatief reageren*(op ideeën/mening van een ander)*

Herverdelen rollen & taken of herdefiniëren van taken*(werk opnieuw verdelen/bespreken)*

Extra gedrag aanwezig in vergaderingen

Onvoorbereid of afwezig bij teamgesprek*(lezenof doorwerken tijdens vergadering)*

Geroesemoes / seinen in vergadering

Dezelfde mensen de aandacht geven*(bij ieder nieuw onderwerp)*

Geobserveerd door:	
Team naam:	
Aantal teamleden:	
Werkvloer of Vergadering (W/V):	
Tijdsduur observatie:	

Notities (Bij alle score 2 gedragingen)

Appendix VII: Questionnaire

The questionnaire issued after the observations is presented below.

Vragenlijst Continu Verbeterklimaat

Welkom! Pak een kop koffie en ga even rustig zitten voor deze vragenlijst.
Vandaag hebben we naar het gedrag binnen uw team gekeken. Dat is heel interessant, maar wat zegt het gedrag dat we vandaag gezien hebben nu precies over het continu verbeter klimaat in uw team? Om daar achter te komen hebben we uw hulp nodig. Het invullen van de vragenlijst duurt maximaal 10 minuten en bestaat uit twee pagina's.
Deze vragenlijst is **anoniem**. U kunt de enquête na afloop in de meegegeven envelop doen en de gesloten envelop bij de observant inleveren. De resultaten worden op groepsniveau teruggekoppeld. Dit betekent dat niemand te weten kan komen welke antwoorden u hebt gegeven.

Het beantwoorden van de vragen

Bij iedere vraag is er keuze uit zeven antwoorden van volledig mee oneens tot volledig mee eens, waarvan u er één kunt kiezen. U kunt uw keuze duidelijk maken door het inkleuren van het bijbehorende hokje. Wanneer u per ongeluk het verkeerde antwoord hebt aangekruist, dan kunt u uw antwoord verbeteren door uw foute antwoord door te kruisen en het juiste hokje in te kleuren. Hieronder is een voorbeeld van hoe een fout antwoord gecorrigeerd kan worden.

	Foute antwoord			Juiste antwoord			
1. Binnen mijn team praten we graag over voetbal	□	☒	□	□	■	□	□

Succes en alvast bedankt voor het invullen!
U krijgt nu een aantal stellingen over leer- en hulpgedrag binnen uw team. Geef hierbij aan in hoeverre deze stelling volgens u van toepassing is op uw team op een schaal lopend van **'volledig mee oneens'** tot **'volledig mee eens'**.

	Volledig mee oneens	**Mee oneens**	**Beetje mee oneens**	**Niet eens/ niet oneens**	**Beetje mee eens**	**Mee eens**	**Volledig mee eens**
1. Teamleden wisselen onderling informatie uit.	□	□	□	□	□	□	□
2. De unieke vaardigheden en talenten van teamleden worden gewaardeerd en benut in het team.	□	□	□	□	□	□	□
3. Wanneer iemand in het team iets goed kan, vragen teamleden of die collega het hen ook wil leren.	□	□	□	□	□	□	□
4. Het is veilig om een risico te nemen in dit team.	□	□	□	□	□	□	□
5. Als teamleden iets nieuws hebben geleerd, vertellen ze dit aan elkaar.	□	□	□	□	□	□	□
6. Wanneer teamleden bepaalde kennis nodig hebben, vragen zij elkaar daarnaar.	□	□	□	□	□	□	□
7. Teamleden vertellen elkaar regelmatig waar ze mee bezig zijn.	□	□	□	□	□	□	□
8. Als je een fout maakt in dit team, dan wordt dit niet tegen je gebruikt.	□	□	□	□	□	□	□
9. Wanneer teamleden iets moeten leren, vragen zij	□	□	□	□	□	□	□

elkaar naar hun bekwaamheid hierin.							
10. Teamleden zijn in staat om problemen en moeilijke onderwerpen ter sprake te brengen.	□	□	□	□	□	□	□
11. Teamleden worden graag geïnformeerd over elkaars' kennis.	□	□	□	□	□	□	□
12. Teamleden vinden het belangrijk dat ze van elkaar weten waar zij mee bezig zijn.	□	□	□	□	□	□	□
13. Niemand in dit team zal werk van andere teamleden bewust ondermijnen.	□	□	□	□	□	□	□

U krijgt nu een aantal vragen over moeilijke situaties in uw team. Geef hierbij aan hoe vaak deze situaties voorkomen, op een schaal lopend van **'nooit'** tot **'altijd'**.

	Nooit	**Zelden**	**Soms**	**Regelmatig**	**Vaak**	**Bijna altijd**	**Altijd**
14. Hoe vaak moet dit team meningsverschillen overbruggen?	□	□	□	□	□	□	□
15. Hoe vaak zijn er tegenstrijdige ideeën in dit team?	□	□	□	□	□	□	□
16. Hoe vaak hebben teamleden taak gerelateerde onenigheid?	□	□	□	□	□	□	□
17. Hoe vaak zijn de standpunten van teamleden in beslissingen verschillend?	□	□	□	□	□	□	□
18. Hoe vaak is er onenigheid over de taakverdeling binnen het team?	□	□	□	□	□	□	□
19. Hoe vaak is uw team het oneens over het werk?	□	□	□	□	□	□	□
20. Hoe vaak is er onenigheid over het werkproces in uw team?	□	□	□	□	□	□	□
21. Hoe vaak is er onenigheid over taakverantwoordelijkheden binnen dit team?	□	□	□	□	□	□	□
22. Hoe vaak hebben teamleden ruzie over werk gerelateerde zaken?	□	□	□	□	□	□	□
23. Hoe vaak worden er persoonlijke kwesties uitgevochten in dit team?	□	□	□	□	□	□	□
24. Hoe vaak maken teamleden ruzie over persoonlijke zaken?	□	□	□	□	□	□	□
25. Hoe vaak is uw team het oneens over niet-werk gerelateerde zaken?	□	□	□	□	□	□	□
26. Hoe vaak heeft uw team ruzie over niet-werk	□	□	□	□	□	□	□

gerelateerde zaken?							
27. Hoe vaak zijn teamleden het oneens over de werkwijze?	□	□	□	□	□	□	□

Nu volgen twee vragen over het observeren.

	Volledig mee oneens	**Mee oneens**	**Beetje mee oneens**	**Niet eens/ niet oneens**	**Beetje mee eens**	**Mee eens**	**Volledig mee eens**
1. Mijn gedrag werd niet beïnvloed door het observeren	□	□	□	□	□	□	□
2. De tijd waarin geobserveerd werd is vergelijkbaar met andere vergaderingen en werktijden	□	□	□	□	□	□	□

Ter afsluiting nog enkele algemene vragen.

1. Bent u een man of een vrouw?	☐ **Man** ☐ **Vrouw**
2. In welk jaar bent u geboren?	……
3. Wat is de hoogste opleiding die u hebt afgerond?	☐ LBO ☐ MBO ☐ HBO ☐ WO ☐ Anders, namelijk: ……
4. Hoe lang werkt u in dit team?	…… jaar
5. Hoe lang werkt u binnen dit team in deze functie?	…… jaar
6. Hoe lang werkt u in deze organisatie?	…… jaar

Dit was het alweer. U mag nu de enquête direct bij de observant inleveren. Hartelijk bedankt voor uw medewerking!

Appendix VIII: Observation Procedure

The observation procedure, definitions of the behaviors and the measurement procedure are presented below.

1. Instructie Observatie Continu Verbeterklimaat

In dit hoofdstuk wordt in stappen de procedure uitgelegd die gevolgd moet worden om de vergelijkbaarheid en kwaliteit van het observatieschema te verhogen.

1. Je hebt in totaal drie documenten voor de observaties. Dit zijn: dit document met de procedure en definities, een enquête voor teamleden en het observatieschema.
2. Om te beginnen lees je de definities van de gedragingen en het hoofdstuk over de het invullen grondig door. Let hierbij ook op de plaatsing van gedragingen om ze straks snel in het schema terug te kunnen vinden. Bij vragen kun je terecht bij Jasper of Desirée.
3. Voorafgaand aan het daadwerkelijk observeren bespreek je individueel of in een kleine groep setting met Jasper de procedure voor het observeren door. Hier is er gelegenheid om vragen te stellen over de procedure, definities of gebruik van het schema.
4. Er wordt binnen één team minstens 1 uur in een vergadersetting geobserveerd en 1 á 2 uur op de werkvloer.
5. In de vergadersetting positioneer je jezelf dusdanig dat je een goed overzicht hebt over alle teamleden en de gesprekken verstaan kunnen worden. Het observeren begint zodra de vergadering officieel geopend wordt.
6. In een werkvloer setting heb je geen vaste positie. Je kunt naar gelang de situatie verplaatsen en teamleden volgen.
7. Houd je interactie met het team tijdens het observeren tot een minimum. Het gaat erom dat je zo ‘natuurlijk mogelijk’ gedrag observeert van het team.
8. Tijdens het observeren turf je de gedragingen. Iedere keer dat een gedrag waargenomen is wordt dit bijgehouden. De standaard wijze van turven wordt aangehouden (strepen of 1’tjes) tenzij er een extreme situatie met negatieve emoties plaatsvindt. Deze extreme situaties worden genoteerd als een 2 om een hoge impact aan te geven. Daarbij wordt op het observatieschema in het notitie vak in steekwoorden opgeschreven wat de situatie was. Meer informatie over de betekenis van extreme situaties staat in het hoofdstuk 3 (Negatieve emoties en het meten ervan).
9. Na afloop van het observeren noteer je de tijdsduur van de observatie.
10. Ter afsluiting deel je de enquête uit onder de teamleden. Deze kunnen anoniem ingevuld worden en na afloop per team verzameld en samen met de ingevulde observatieschema’s in een envelop gedaan. Op deze envelop noteer je om welk team het gaat.

2. Definities van Gedragingen

Hieronder worden de definities van de verschillende gedragingen uitgelegd. Deze gedragingen zijn in dezelfde volgorde gepresenteerd als op het observatieschema.
De overkoepelende categorieën goede sfeer, defensief of ontwijkend gedrag, verantwoordelijkheden, feedback, kennisdelen & werkwijzen en extra gedrag aanwezig in

vergaderingen zijn niet op theorie gebaseerd en zijn enkel bedoeld om het gebruikersgemak te vergroten.

Goede Sfeer

Ontspannen gedrag: Er heerst rust op de werkvloer. Voorbeelden van gedrag die ontspanning aangeven zijn onderling grappen maken of fluiten.

Persoonlijke aandacht: Teamleden praten over dingen die niet van invloed zijn op het uitvoeren van taken of logistieke verdelingen. Deze interactie gaat verder dan algemene vragen die in het dagelijks leven vaak standaard worden gesteld, zoals "hoi, alles goed?". Voorbeelden zijn: "hoe gaat het met je?", "Ik had gisteren een leuk feest", "hoe is het met je vrouw?" of "het restaurant van gisteren was top".

Enthousiasme: Teamleden spreken elkaar met enthousiasme aan. Voorbeelden zijn groeten, complimenteren, bedanken of aanmoedigen. Belangrijk is dat de observant het interpreteert als een gedrag of interactie met positieve emotie.

Eens zijn: Teamleden zijn het met elkaar eens over wat er gezegd wordt. Dit is te herkennen in elkaar aanvullen, bevestigen van wat eerder gezegd is, ja zeggen of knikken.

Defensief of ontwijkend gedrag

Agressie: Een teamlid toont ten opzichte van een eerder moment (nul-meting) agressie of boosheid in zijn/haar stem, lichaamstaal of houding. Voorbeelden van dit gedrag zijn snel praten, trillende stem, stem verheffen, rood aanlopen, rechtop in de stoel zitten of grote en wilde gebaren maken.

Gesloten lichaamshouding: Tijdens een gesprek nemen één of meerdere teamleden een gesloten lichaamshouding aan. Dit kan variëren van de armen over elkaar doen tot achterover leunen, een stap achteruit nemen of weglopen.

Confrontatie ontwijken: Teamleden gaan confrontaties of conflicten uit de weg. Wanneer er in groepsverband een probleem wordt benoemd en niemand reageert op deze aankondiging of er wordt overheen gepraat, dan valt dat onder deze categorie. Ook wanneer iemand persoonlijk aangesproken wordt en hier niet op reageert, valt dat binnen deze categorie.

Verzetten tegen taak: Teamleden tonen verbale of non-verbale tekenen van weerstand of onwil om een taak uit te voeren. Verbale voorbeelden kunnen zijn: "het heeft toch geen zin", "hier heb ik geen zin in", "kan iemand anders het niet doen?" of "wat een rotklus". Non-verbale uitingen kunnen zijn: zuchten, ogen wegdraaien of schouders ophalen. Let wel, deze voorbeelden moeten wel in de context van weerstand tegen een taak passen.

Verantwoordelijkheden

Op verantwoordelijkheid wijzen: Teamleden wijzen elkaar op gemaakte afspraken of op welke taken gedaan moeten worden door een bepaald persoon. Voorbeelden zijn: "jij gaat dit doen toch?" of "vergeet je niet dat je dat nog moet doen".

Schuld afschuiven: Een teamlid die (mede-) verantwoordelijkheid draagt voor een afspraak komt deze niet of slechts deels na. Dit teamlid legt de schuld hiervan bij andere teamleden of projecten neer. Hierbij wordt door het teamlid een tekortkoming toegegeven maar de verantwoordelijkheid daarvoor afgeschoven.

Fouten/slecht werk ontkennen: Een teamlid wordt aangesproken op gemaakte fouten of slecht werk en ontkent dit. Het teamlid kan, maar hoeft niet, de schuld bij anderen neer leggen. Dit gedrag wijkt af van het bovenstaande gedrag omdat het teamlid niet toegeeft dat

er sprake is van een tekortkoming van zijn/haar kant en er geen afspraak hoeft te zijn. Voorbeelden kunnen productie fouten of logistieke missers zijn.
Afspraken niet nakomen/uitstellen: Dit gedrag is van toepassing wanneer een teamlid een toezegging maakt en deze niet (op tijd) nakomt. Belangrijk bij dit gedrag is dat het teamlid de reden hiervoor niet bij anderen neerlegt maar er niks over zegt of aangeeft zelf debet hieraan te zijn. Wanneer de schuld bij anderen neer wordt gelegd hoort dit gedrag bij "teamleden geven andere teamleden of projecten de schuld voor fout gelopen of niet nagekomen afspraken".

Feedback

Actief luisteren: Onder actief luisteren valt gedrag als verifiëren, parafraseren, samenvatten, doorvragen en notities maken. Het is dus meer dan enkel stil zijn en de persoon die aan het woord is aankijken.
Onderbreken: Teamleden laten elkaar niet uitpraten. Bij dit gedrag wordt er door elkaar gepraat, worden mensen afgekapt of er worden over opmerkingen heen gepraat. De context waarin onderbroken/door elkaar gepraat wordt is hierbij niet relevant. Dit kan dus zowel tijdens een hevige discussie zijn als tijdens een constructief gesprek waar teamleden overenthousiast door elkaar heen praten.
Feedback: Teamleden benaderen elkaar om te vragen naar feedback of geven feedback. Dit kan naar aanleiding zijn van een fout (vragen wat er verkeerd gedaan is of hoe het anders moet) of juist een compliment zijn (wat er goed gaat).
Niet aankijken bij feedback: Teamleden geven elkaar feedback terwijl minstens één teamlid de ogen van de ander ontwijkt. Wanneer er één of meerdere momenten kort oogcontact plaats vindt is dit gedrag niet van toepassing.
Grappen over onenigheid: Teamleden maken grappen die betrekking hebben op andermans werkwijze, prestaties of eerdere discussiepunten. Het kan een soort zelfspot grap zijn maar ook het direct grappen over blunders of eigenschappen van een ander.
Enthousiasme koel beantwoorden: Een teamlid benadert één of meerdere andere teamleden enthousiast om te vragen naar of vertellen over een werk of niet-werk gerelateerd onderwerp en de andere teamleden niet, negatief of ongeïnteresseerd reageren. Voorbeelden van zulke reacties zijn: "dat is niet zo boeiend", "komt hij ook weer aan", "dat gaat toch niet werken", "dat is toch normaal", schouders ophalen of weglopen.

Kennisdelen

Open vraag stellen: Een teamlid stelt een open vraag waar geen onderliggende mening, beschuldiging of aanname in verwerkt is.
Hulp vragen of aanbieden: Teamleden vragen actief aan andere teamleden of zij kunnen helpen bij het oplossen van een probleem of bijspringen bij tegenslagen. Dit gedrag is ook van toepassing wanneer teamleden actief of spontaan hulp aanbieden om een ander uit de brand te helpen of kort iets uit te leggen. Hier mag, maar hoeft niet, een hulpvraag aan vooraf te gaan.
Sparren / kort overleggen: Teamleden zoeken toenadering tot elkaar om kort een werk-gerelateerd onderwerp te bespreken. Dit kan zijn iets uitleggen of voordoen, of een kleine taakverdeling maken.

Zoeken naar verbetermogelijkheden: Teamleden zoeken actief met elkaar naar oplossingen voor problemen of verbeteren hun werkwijze. Hierbij vergelijken zij verschillende werkwijzen met elkaar of stellen hun huidige werkwijze aan de orde. Voorbeelden van bijpassend gedrag kan zijn: elkaar vragen stellen of zij hetzelfde probleem kennen en hoe ze ermee omgaan, in een voorstellen om een taak op een andere manier uit te voeren.
Resultaten bespreken en vergelijken: Teamleden evalueren hun eigen prestaties en vergelijken het met elkaar. Hierbij worden de resultaten met elkaar besproken en worden verschillen of overeenkomsten duidelijk.
Werkwijzen, ervaringen en nieuwe kennis delen: Teamleden delen een gevonden oplossing voor een probleem, aangepaste werkwijze of andere leerervaringen met elkaar wat bijdraagt aan het team actief met elkaar. Dit kan tijdens, vergaderingen of geplande meekijk momenten zijn.
Negatief reageren: Een teamlid oppert een idee die door één of meerdere teamleden direct negatief ontvangen wordt. Dit kan variëren van “dit werkt toch niet”, “waarom zou het nu wel goed gaan?” tot “wat een waardeloos idee”.
Herverdelen rollen & taken of herdefiniëren van taken: Teamleden bespreken voor bestaande en al vaker uitgevoerde taken een taakverdeling of inhoud van een taak met elkaar. Het gaat hier over het bespreken van taken die op een reguliere basis uitgevoerd worden maar die nog geen vaste verdeling en procedure hebben of herzien worden.

Extra gedrag aanwezig in vergaderingen (niet relevant op de werkvloer)

Onvoorbereid of afwezig bij teamgesprek: Teamleden hebben vooraf documenten ontvangen voor een gesprek of hebben zelf een rol in de vergadering maar hebben zich niet ingelezen of voorbereid. Voorbeelden van gedrag dat hier op duidt is: documenten tijdens de vergadering lezen/scannen i.p.v. bespreken, of niet kunnen meepraten over een onderwerp. Ook het wegblijven bij een vergadering (zonder ziek te zijn) valt hieronder.
Geroesemoes/seinen in vergadering: Teamleden hebben onderonsjes met elkaar. Ze voeren een onderling gesprek met elkaar en zonderen zich daarmee af van de vergadering. Er kan ook non-verbaal geseind worden, bijvoorbeeld een duim omhoog doen en knipogen in reactie op wat er tijdens de vergadering gezegd wordt. Belangrijk is dat de betekenis of inhoud van deze communicatie niet met de rest van het team gedeeld wordt.
Dezelfde mensen de aandacht geven: Eén of meerdere teamleden voeren in een groep-setting op de meeste onderwerpen het hoogste woord en de rest van het team zegt weinig tot niets. Dit gedrag wordt geregistreerd wanneer bij een nieuw onderwerp of tijdens een discussie één of twee teamleden telkens de eerste zijn die reageren.

3. *Negatieve Emoties en het meten ervan*

Gedrag in teams is belangrijk maar de negatieve emoties die samen met dit gedrag gaan bepalen grotendeels het effect van dit gedrag op de groep. De bovenstaande gedragingen hebben allemaal een effect op het niveau van psychologische veiligheid, maar de negatieve emoties die met dit gedrag gepaard gaan bepalen de uiteindelijke impact van dit gedrag. Negatieve emoties bestaan uit jaloezie, haat, woede en frustratie. Deze emotie is niet duidelijk zichtbaar. Daarvoor vragen we jou, als observant van gedrag, om bij gedrag te interpreteren hoeveel negatieve emoties daarbij komen en extreme gevallen waar te nemen.

Hieronder is een voorbeeld van gedrag, met twee context situaties die negatieve emotionaliteit aangeeft.

1. Gedrag: Agressie of boosheid in stem, lichaamstaal of houding
   Negatieve emoties: Niet extreem
   Voorbeeld: In een vergadering wordt een man niet gehoord. Uit frustratie begint deze man harder te praten en tikt op de tafel om de aandacht te krijgen.

2. Gedrag: Agressie of boosheid in stem, lichaamstaal of houding
   Negatieve emoties: Extreem
   Voorbeeld: In een vergadering wordt een man voor gek verklaard en willen teamleden en de teamleider niet naar zijn idee luisteren. Uit frustratie en woede staat hij op, begint te schreeuwen en slaat op de tafel.

De twee bovenstaande voorbeelden tonen hetzelfde gedrag (agressie of boosheid in zijn stem, lichaamstaal of houding). Echter, het effect van dit gedrag op de veiligheid binnen het team is wel degelijk verschillend. Het eerste voorbeeld hoeft niet tot een reactie van de teamleden te leiden, terwijl het tweede voorbeeld waarschijnlijk leidt tot angst of conflict escalatie binnen het team.

Om het niet te ingewikkeld te maken willen we niet alle variaties in negatieve emoties meenemen, maar alleen de extremen te noteren. Zoals in de handleiding (hoofdstuk 1) is beschreven, wordt gedrag geturfd.

Alle gedragingen zonder extreme negatieve emoties worden op de normale manier geturfd door een 1 of streepje te noteren. Wanneer er sprake is van extreme negatieve emoties noteer je echter een 2 (i.p.v. een 1 of een streepje). Wanneer je in het observatie schema een 2 noteert, schrijf je (na afloop) in steekwoorden op wat de situatie was en wat er gebeurd is.

Om te illustreren hoe de bovenstaande beschrijving er in de praktijk uitziet worden de bovenste twee voorbeelden ingevuld in het observatieschema. De niet-extreme situatie vindt 10 keer plaats, en de extreme situatie 1 keer. Dat ziet er als volgt uit:

	Defensief of Ontwijkend Gedrag
Agressie of boosheid in stem, lichaamstaal of houding	2

Notities (Bij alle score 2 gedragingen)

- Man werd voor gek verklaard door de rest van zijn team, begon te schreeuwen en op tafel te slaan

Zoals je ziet worden de 10 niet-extreme gedragingen alleen geturfd met een 1. Het extreme gedrag wordt als een 2 genoteerd en vervolgens kort uitgelegd in de notities.

Appendix IX: Observation Schemes for Practitioners

Below we present an observation scheme for team psychological safety for two different settings. Each setting follows a different, brief, observation procedure presented before the relevant scheme. After the scheme, definitions of the behaviors are presented. Please read through the definitions carefully and identify the location of the behaviors on the scheme prior to the observation. For increased usability, the schemes are presented on separate pages.

Observing Team Psychological Safety in Meetings

- Prior to observing in a meeting, introduce oneself to the team being observed. Explain the purpose of the observation to identify communication patterns within the teams without referring to psychological safety as this might trigger unneccesary and undesirable anxiousness within the team. Stress, for the purpose of this observation, that there is no wrong or right behavior to encourage normal team interaction.
- In the meeting setting, assume a position in the room where you can see and hear all team members well, meanwhile not becoming the center point of attention. In the back of the room is generally a good position. Do not interfere with the meeting during the period of the observation.
- All behaviors are tallied, including team leader behaviors. Additional notes, when deemed relevant, can be made below the observation scheme. These can aid providing context to the observed behaviors.

Meeting Behaviors	**Behavior Count**
1) Aggression *(raise voice, large gestures)*	
2) Negatively react towards ideas *(… or opinions of other team members)*	
3) Resistance against task *(react negatively towards the execution of a task)*	
4) Chatting or signing in sub-groups *(in a meeting, sub-conversation which is not shared with the team)*	
5) React cold to enthusiasm *(react critically or uninterested towards enthusiastic team members)*	
6) Give the same people the attention *(with every new agenda topic; count after 3 times)*	
7) Ask open questions *(no opinion-laden questions)*	
8) Ask or offer help	
9) Acknowledge own mistake *(take responsibility, admit shortcoming)*	

Notes:

Definitions of Meeting Behaviors

The definitions of the behaviors are preceded with a (+) or a (-), which indicates whether this specific behavior is indicative of a high or low level of psychological safety.

Aggression (-): A team member displays, relative to a previous moment (base-line measure), aggression in his/her voice/body language/posture. For instance, speaking much more quickly, a vibrating or raised voice, jump up straight in the chair or making large and wild gestures.

Negatively react towards ideas (-): A team member shares an idea which is received negatively by other team members. This can vary from stating: "this will not work", "why should it work good this time" to "what a worthless idea".

Resistance against task (-): Team members show verbal or non-verbal signs of resistance or unwillingness to perform a task. Verbal examples are: "this is useless", "I don't want to do this", "Can't somebody else do this?". Examples of non-verbal expressions are sighing, rolling eyes or lifting shoulders. Be aware, these examples must fit within the context of resisting against a task.

Chatting or signing in sub-groups (-): A limited set of team members have a sub-conversation without sharing this with the rest of the group, or temporarily disengage from the team-discussion. This can also consist of signing, such as a wink or thumbs up to a specific team member without sharing the meaning of these signs with the rest of the team.

React cold to enthusiasm (+): This behavior is counted when a team member approaches one or multiple other team members enthusiastically to ask for or tell about a (non-)work related subject and the team members react critically, uninterested or do not react at all. Examples of such reactions are "that is not very interesting", "what's so special about that", lift shoulders or walk away.

Giving the same people the attention (+): One or multiple team members are actively involved during the meeting, provide input, or comment on every single point of the agenda. This behavior is only counted when the vast majority of the other team members do not actively engage in the meeting. Furthermore, this behavior is counted only after three consecutive topic changes in which the team member actively engages while the rest does not. A count is added for every new time this specific team member is the only one to engage in a discussion. Team members or the leam leader who chairs the meeting are not counted.

Ask open questions (+): A team member asks a non-directional question without an implicitly incorporated opinion, allegation or assumption.

Ask or offer help (+): Team members actively ask whether other team members can help solving a problem or other issues. This behavior is also counted when team members actively or spontaneously offer help to another team member. This may, but does not need to, be preceded by a call for help.

Acknowledge own mistake (+): This behavior is present when a team member makes a commitment and does not live up to this commitment (in time). Be aware, this behaviour is only present when the team member does not blame other people or circumstances but acknowledges his/her own shortcoming. When team members blame others this is not counted in this category.

Observing Team Psychological Safety in the Workplace

- When observing in the workplace we recommend following one or two specific team members. Beforehand, explain to the whole team that the purpose of the observation is to identify communication patterns within the teams without referring to psychological safety as this might trigger unnecessary and undesirable anxiousness within the team. Stress, for the purpose of this observation, that there is no wrong or right behavior to encourage normal team interaction.
- In following a team member, record behavior of the team member and all observable behavior of surrounding team members or the team leader.
- During the observation period, minimize interaction with the followed team member when others are nearby. When it is evident that interacting with the followed team member will not prevent other naturally-occurring interactions, the observer can interact with the followed team member to collect more in-depth information.
- All behaviors are tallied. Additional notes, when deemed relevant, can be made below the observation scheme. These can aid providing context to the observed behaviors.

Workplace Behaviors	**Behavior Count**
1) Evade confrontation *(do not react to addressed problems or confrontations)*	
2) Resistance against task *(react negatively towards the execution of a task)*	
3) Discuss and compare results *(evaluate performance between team members)*	
4) Re-divide tasks *(of routine or previously divided tasks)*	
5) Joke about disagreements *(about previous feedback, procedures or issues)*	
6) Brief consultations *(ask information or help, walk to other desk)*	
7) Share knowledge *(found solutions, work procedures, experiences)*	

Notes

Definitions of Workplace Behaviors

The definitions of the behaviors are preceded with a (+) or a (-), which indicates whether this specific behavior is indicative of a high or low level of psychological safety.

Evade confrontation (-): Team members no not respond to attempted confrontations or engage in conflicts. When a problem or issue is addressed in a team-setting and no one responds or team members directly shift to a new topic, this behavior is counted.

Resistance against task (-): Team members show verbal or non-verbal signs of resistance or unwillingness to perform a task. Verbal examples are: "this is useless", "I don't want to do this", "Can't somebody else do this?". Examples of non-verbal expressions are sighing, rolling eyes or lift shoulders. Be aware, these examples must fit within the context of resisting against a task.

Discuss and compare results (-): Team members evaluate their own performance and compare it with other team members. Here results are discussed and differences and similarities are identified.

Re-divide tasks (-): Team members discuss about the contents or division of existing and frequently performed tasks. This applies to tasks which are executed on a frequent basis but which are not properly documented yet or are not scheduled for a specific team member.

Joke about disagreements (-): Team members make jokes which relate to working methods or performance of other team members or other previously discussed issues. It may relate to their own issues or the issues of other team members.

Brief consultation (+): Team members approach each other to briefly discuss a work-related subject. This may consist of explaining something, showing how to do something or briefly divide tasks.

Share procedures, knowledge and experiences (+): Team members share a found solution to a problem, modified work-method or other learning experiences with each other which contributes to team learning.

Appendix X: Correlation Table Survey Measures

Spearman's Rho Correlation table of Survey Measures

	Info Sharing 1/8	Info Sharing 2/8	Info Sharing 3/8	Info Sharing 4/8	Info Sharing 5/8	Info Sharing 6/8	Info Sharing 7/8	Info Sharing 8/8	PS 1/5	PS 2/5	PS 3/5	PS 4/5	PS 5/5	Task Conflict 1/9	Task Conflict 2/9	Task Conflict 3/9	Task Conflict 4/9	Task Conflict 5/9	Task Conflict 6/9	Task Conflict 7/9	Task Conflict 8/9	Task Conflict 9/9	Relationship Conflict 1/5	Relationship Conflict 2/5	Relationship Conflict 3/5	Relationship Conflict 4/5	Relationship Conflict 5/5
Info Sharing 1/8	1.00																										
Info Sharing 2/8	.49**	1.00																									
Info Sharing 3/8	.52**	.48**	1.00																								
Info Sharing 4/8	.47**	.57**	.45**	1.00																							
Info Sharing 5/8	.50**	.49**	.51**	.41**	1.00																						
Info Sharing 6/8	.43**	.58**	.48**	.49**	.56**	1.00																					
Info Sharing 7/8	.51**	.55**	.45**	.40**	.47**	.55**	1.00																				
Info Sharing 8/8	.33**	.36**	.27**	.26**	.56**	.44**	.45**	1.00																			
PS 1/5	.54**	.57**	.44**	.44**	.41**	.53**	.44**	.36**	1.00																		
PS 2/5	.24**	.31**	.40**	.27**	.31**	.19*	.26**	.28**	.33**	1.00																	
PS 3/5	.38**	.30**	.33**	.37**	.47**	.50**	.37**	.29**	.39**	.26**	1.00																
PS 4/5	.39**	.37**	.40**	.34**	.41**	.52**	.46**	.36**	.44**	.23**	.22*	1.00															
PS 5/5	.21*	.21*	.19*	.35**	.30**	.28**	.26**	.32**	.29**	0.15	.34**	.19*	1.00														
Task Conflict 1/9	-0.17	-.26**	-0.13	-0.11	-.23**	-.28**	-.21*	-0.14	-0.16	-0.15	-.30**	-0.12	-0.14	1.00													
Task Conflict 2/9	-.20*	-.19*	-.21*	-0.14	-.29**	-.39**	-.25**	-0.17	-.26**	-0.11	-.40**	-0.14	-.25**	.66**	1.00												
Task Conflict 3/9	-.19*	-0.12	-0.14	-0.16	-.19*	-.24**	-.17*	-0.01	-.27**	-0.10	-.31**	-.23*	-.32**	.51**	.62**	1.00											
Task Conflict 4/9	-.18*	-0.15	-0.04	-0.04	-0.07	-0.14	-0.07	-0.12	-0.14	0.01	-.18*	-0.08	-.19*	.48**	.50**	.42**	1.00										
Task Conflict 5/9	-.21*	-.26**	-0.13	-.20*	-.29**	-.24**	-.27**	-0.09	-.25**	-0.16	-.33**	-.20*	-.35**	.48**	.49**	.47**	.34**	1.00									
Task Conflict 6/9	-.19*	-.22*	-0.14	-0.04	-.18*	-.27**	-0.10	-0.09	-.21*	-0.15	-.24**	-0.14	-.30**	.33**	.44**	.49**	.42**	.42**	1.00								
Task Conflict 7/9	-.23**	-0.12	-0.05	0.01	-0.06	-.26**	-0.11	-0.02	-0.09	0.08	-.18*	-0.17	-.22*	.34**	.37**	.41**	.45**	.37**	.43**	1.00							
Task Conflict 8/9	-.19*	-.29**	-0.14	-0.09	-0.10	-.26**	-.24**	-0.10	-.24**	-.18*	-0.07	-.21*	-.21*	.40**	.36**	.31**	.34**	.48**	.32**	.54**	1.00						
Task Conflict 9/9	-.21*	-.25**	-.18*	-0.14	-.20*	-.26**	-0.16	-0.16	-.19*	-.26**	-0.17	-.27**	-0.07	.41**	.37**	.32**	.26**	.29**	.41**	.34**	.45**	1.00					
Relationship Conflict 1/5	-.21*	-.20*	-.19*	-.27**	-.28**	-.18*	-.23**	-0.10	-.21*	-.18*	-.36**	-.21*	-.28**	.33**	.36**	.32**	.21*	.42**	.32**	.18*	.25**	.30**	1.00				
Relationship Conflict 2/5	-.27**	-0.09	-0.10	-.28**	-0.12	-.21*	-.26**	-.17*	-.19*	-.20*	-.37**	-.26**	-.33**	.30**	.34**	.34**	.30**	.42**	.30**	.23**	.23*	.32**	.63**	1.00			
Relationship Conflict 3/5	-.27**	-0.16	-0.17	-.23*	-.22*	-0.17	-.32**	-.20*	-.18*	-.29**	-.43**	-0.17	-.20*	.26**	.31**	.22**	.20*	.35**	0.16	0.15	.22*	.21*	.70**	.74**	1.00		
Relationship Conflict 4/5	-0.10	-0.13	-0.06	-0.10	-.22*	-.25**	-.17*	-.28**	-.23**	-.26**	-.25**	-.23**	-.18*	.35**	.26**+	.33**	0.16	0.13	.23*	0.15	.20*	.34**	.37**	.46**	.50**	1.00	
Relationship Conflict 5/5	-0.15	-0.10	-0.12	-.17*	-.20*	-.21*	-.20*	-.20*	-.20*	-.26**	-.38**	-.24**	-0.16	.31**	.29**	.23**	.177*	.27**	.22*	.19*	.21*	.34**	.59**	.64**	.78**	.67**	1.00

*p <0.10 **p < 0.05 ***p < 0.01

Appendix XI: Correlation Table Field Observations

Correlation Table Field Observation, page 1 of 3

	Survey Measures				Meeting Behaviors																				
	TPS	Information Sharing	Relationship Conflict	Task Conflict	Ontspannen Gedrag	Persoonlijke Aandacht	Enthousiasme	Eens Zijn	Agressie	Gesloten lichaamshouding	Confrontatie ontwijken	Verzet tegen taak	Op verantwoordelijkheid wijzen	Schuld Afschuiven	Fouten ontkennen	Afpraken niet nakomen	Luisteren	Onderbreken	Feedback geven en vragen	Grappen over onenigheid	Enthousiasme koel beantwoorden	Open vraag stellen	Hulp vragen of aanbieden	Sparren of kort overleggen	Verbetermogelijkheden zoeken	Resultaten bespreken
Survey Measures																									
TPS	1.00																								
Information Sharing	.88***	1.00																							
Relationship Conflict	-.87***	-.73**	1.00																						
Task Conflict	-.78***	-.78***	.72**	1.00																					
Meeting Behaviors																									
Ontspannen Gedrag	.41	.24	-.53	-.35	1.00																				
Persoonlijke Aandacht	.04	.11	.04	.07	.55*	1.00																			
Enthousiasme	-.09	.02	.20	-.10	-.33	.14	1.00																		
Eens Zijn	.20	-.02	-.45	.16	.26	-.17	-.25	1.00																	
Agressie	-.77***	-.79***	.52	.72**	-.23	-.16	-.09	.16	1.00																
Gesloten lichaamshouding	.24	.43	-.43	-.10	.18	.11	-.44	.12	-.16	1.00															
Confrontatie ontwijken	-.52	-.41	.41	.06	-.41	-.36	.29	-.52	.52	-.17	1.00														
Verzet tegen taak	-.36	-.48	.56*	.41	-.72**	-.32	.32	-.27	.22	-.58*	.29	1.00													
Verantwoordelijkheid wijzen	-.36	-.46	.40	-.05	-.11	-.21	.22	-.32	.32	-.81***	.52	.36	1.00												
Schuld Afschuiven	-.01	-.13	.14	-.26	-.20	-.16	.75**	-.32	-.16	-.63**	.41	.48	.48	1.00											
Fouten ontkennen	-.38	-.43	.37	.15	-.08	-.09	-.37	-.58*	.36	-.06	.56*	.33	.43	-.02	1.00										
Afpraken niet nakomen	.29	.19	-.41	-.59*	.24	-.21	-.06	-.33	-.08	.16	.54	-.12	.20	.31	.51	1.00									
Luisteren	-.45	-.52	.39	.53	-.15	-.11	-.01	.24	.81***	-.42	.29	.18	.41	-.14	.08	-.23	1.00								
Onderbreken	-.26	-.39	.22	.54	.07	.11	.10	.66**	.35	-.41	-.41	.03	.04	-.09	-.55*	-.75**	.55*	1.00							
Feedback geven/vragen	-.16	-.33	.30	.02	-.21	-.52	.08	-.25	.20	-.48	.52	.39	.46	.54	.30	.34	.28	-.04	1.00						
Grappen over onenigheid	-.22	-.22	.51	-.02	-.27	.10	.21	-.75**	-.19	-.52	.23	.61*	.54	.45	.56*	.09	-.23	-.35	.21	1.00					
Entousiasme koel antwoorden	.56*	.48	-.48	-.25	.22	.35	.13	-.02	-.38	.44	-.21	-.05	-.64**	.07	-.12	.33	-.40	-.35	-.17	-.16	1.00				
Open vraag stellen	.37	.29	-.58*	-.14	.57*	.08	-.30	.55	.10	.47	-.18	-.68**	-.46	-.36	-.33	.21	.21	.17	-.01	-.87***	.35	1.00			
Hulp vragen/aanbieden	.81**	.81***	-.67**	-.55*	.38	.34	.08	.15	-.45	.21	-.41	-.41	-.34	-.16	-.42	.13	-.04	-.09	-.31	-.34	.57*	.50	1.00		
Sparren of kort overleggen	.21	.18	-.18	-.16	.12	-.07	.04	.01	.28	-.03	.33	-.17	.10	-.01	.01	.36	.59*	-.03	.40	-.38	.22	.62*	.54	1.00	
Verbetermogelijkheden zoeken	-.25	-.37	.36	.44	-.35	-.40	.08	.33	.45	-.54	.06	.36	.27	.09	-.23	-.42	.77***	.67**	.54	-.20	-.38	.12	-.09	.42	1.00	
Resultaten bespreken	.18	.12	-.04	.04	-.06	.23	.40	.33	.01	-.50	-.36	.18	.18	.05	-.48	-.49	.43	.57*	-.31	-.04	-.05	-.08	.48	.17	.40	1.00

*$p < 0.10$ **$p < 0.05$ ***$p < 0.01$

Correlation Table Field Observation, page 2 of 3

	Survey Measures				Meeting Behaviors																				
	TPS	Information Sharing	Relationship Conflict	Task Conflict	Ontspannen Gedrag	Persoonlijke Aandacht	Enthousiasme	Eens Zijn	Agressie	Gesloten lichaamshouding	Confrontatie ontwijken	Verzet tegen taak	Verantwoordelijkheid wijzen	Schuld Afschuiven	Fouten ontkennen	Afpraken niet nakomen	Luisteren	Onderbreken	Feedback geven en vragen	Grappen over onenigheid	Enthousiasme koel beantwoorden	Open vraag stellen	Hulp vragen of aanbieden	Sparren of kort overleggen	Verbetermogelijkheid zoeken	Resultaten bespreken
Meeting Behaviors																									
Werkwijzen en kennis delen	-.10	-.02	.21	-.07	-.27	-.24	.27	.07	.12	-.61*	.06	.09	.59*	.11	-.28	-.37	.50	.42	.10	.07	-.69**	-.24	.07	.18	.56*	.63*
Negatief reageren op ideeën	-.54	-.43	.84***	.38	-.45	.16	.35	-.56*	.12	-.65**	.17	.60*	.53	.29	.25	-.44	.20	.16	.18	.77***	-.45	-.80***	-.41	-.28	.25	.25
Taken herverdelen	.20	.13	.14	.11	-.59*	-.16	.31	-.11	-.29	-.28	-.21	.75**	-.14	.29	-.12	-.27	-.13	.01	.10	.38	.34	-.46	.13	-.13	.25	.36
Onvoorbereid / afwezig zijn	-.31	-.09	.41	.09	-.47	-.10	.74**	-.39	.08	-.15	.53	.23	.04	.57	-.22	-.01	.06	-.02	.41	.05	.05	-.11	-.17	.20	.23	-.11
Geroesemoes	-.71**	-.62*	.87***	.43	-.38	-.02	.08	-.53	.22	-.52	.29	.49	.57*	.21	.45	-.31	.10	.08	.27	.74**	-.65*	-.78***	-.75**	-.46	.14	-.14
Dezelfden aandacht geven	.46	.37	-.74**	-.48	.46	-.35	-.50	.55*	-.25	.46	-.26	-.67**	-.26	-.30	-.25	.29	-.29	-.08	-.11	-.60**	-.05	.56*	.14	-.02	-.20	-.32
Workplace Behaviors																										
Ontspannen Gedrag	.02	.05	.10	.37	-.23	.15	.22	.17	-.27	.10	-.41	.25	-.69**	.04	-.47	-.48	-.17	.28	.02	-.07	.50	.02	.03	-.18	.18	.02
Persoonlijke Aandacht	.10	.17	-.43	-.25	-.03	-.22	.43	.18	.02	.40	.41	-.27	-.28	.30	-.22	.55	-.23	-.32	.03	-.44	.42	.46	.08	.20	-.22	-.31
Enthousiasme	-.25	-.22	.13	.48	.03	.39	.40	.28	.15	.17	-.14	-.10	-.56	.04	-.53	-.39	.08	.45	-.03	-.40	.34	.36	-.05	.02	.22	.02
Eens Zijn	.15	.00	-.32	-.02	.13	-.05	.05	.65*	.35	-.32	-.14	-.05	.29	-.10	-.18	-.11	.55	.43	-.23	-.38	-.19	.22	.47	.38	.33	.82***
Agressie	-.24	-.27	-.03	-.14	.32	.06	.11	-.05	.49	-.03	.55	-.40	.53	.08	.25	.42	.28	-.08	.02	-.21	-.40	.26	-.13	.28	-.08	-.06
Gesloten lichaamshouding	.14	.41	-.41	-.27	-.14	-.42	-.27	.41	-.14	.55	-.13	-.41	-.28	-.41	-.30	.00	-.27	-.14	-.55	-.41	-.24	.14	.00	-.30	-.27	-.14
Confrontatie ontwijken	-.59*	-.71**	.39	.32	-.05	.19	.64	-.14	.59	-.43	.56	.18	.60*	.45	.15	.08	.30	.18	.02	.14	-.37	-.21	-.48	-.05	.09	.19
Verzet tegen taak	-.62*	-.77**	.75**	.33	-.23	.12	.52	-.67**	.33	-.70**	.55	.57	.76**	.61*	.46	.03	.17	.03	.40	.71**	-.43	-.66*	-.70**	-.20	.15	-.02
Verantwoordelijkheid wijzen	-.35	-.54	.39	.22	-.41	-.17	.65*	-.11	.25	-.86***	.28	.69**	.74**	.63*	.09	-.14	.25	.28	.13	.50	-.45	-.68**	-.38	-.21	.32	.54
Schuld Afschuiven	.45	.29	-.24	-.50	.03	-.18	.28	.06	-.50	-.64	-.28	.24	.46	.49	-.17	-.02	-.20	.14	.08	.38	-.22	-.43	.21	-.19	.04	.49
Fouten ontkennen	.16	.07	.22	-.05	.09	.19	-.53	-.47	-.29	-.18	-.30	.31	.18	-.22	.52	-.08	-.16	-.26	.00	.70**	.00	-.50	.02	-.24	-.22	-.04
Afpraken niet nakomen	.20	-.09	.01	-.24	.12	.04	.15	-.16	-.04	-.75**	.00	.39	.73**	.38	.32	.14	.16	.03	.16	.52	-.19	-.43	.17	.08	.07	.54
Luisteren	-.32	-.47	.18	.48	.40	.57	.02	.30	.68**	-.17	.00	-.18	.13	-.24	.00	-.26	.70**	.53	-.10	-.36	-.08	.39	.17	.44	.33	.47
Onderbreken	.38	.22	-.42	-.17	.35	.26	.03	.60*	-.08	-.30	-.55	-.07	.13	-.12	-.31	-.26	.10	.40	-.53	-.13	-.04	.00	.52	-.07	-.03	.83***
Feedback geven en vragen	.07	-.24	-.11	.11	.28	.32	.33	.32	.37	-.54	.00	.15	.37	.24	.00	.01	.52	.38	.04	-.10	.12	.15	.41	.46	.29	.74**
Grappen over onenigheid	-.60*	-.67*	.77**	.52	-.62*	-.20	.28	-.67**	.27	-.30	.55	.68**	.20	.41	.42	.00	.17	-.13	.63*	.52	-.04	-.46	-.65*	.00	.33	-.36
Enthousiasme koel beantwoorden	.36	.51	-.33	-.36	.47	.37	-.45	-.21	-.54	.77**	-.30	-.53	-.61*	-.40	.03	.24	-.76**	-.54	-.37	-.02	.47	.22	.12	-.36	-.81***	-.68**
Open vraag stellen	.07	-.10	-.05	.30	.05	.23	.20	.67**	.15	-.50	-.55	.20	.05	-.06	-.47	-.66*	.45	.80***	-.30	-.18	-.12	-.03	.35	.04	.47	.98***
Hulp vragen of aanbieden	.12	.27	-.20	-.03	.28	.08	-.52	.57	.02	.22	-.55	-.55	-.15	-.68*	-.40	-.52	.20	.48	-.50	-.49	-.49	.27	.23	-.07	.12	.31
Sparren of kort overleggen	.80***	.73**	-.80***	-.58*	.57	.14	-.52	.45	-.38	.30	-.55	-.45	-.24	-.44	-.09	.21	-.18	-.17	-.42	-.30	.38	.41	.85***	.20	-.37	.27
Verbetermogelijkheden zoeken	.13	.00	-.02	.13	.61*	.61*	-.19	.38	.09	-.23	-.55	-.35	.01	-.30	-.30	-.52	.41	.70**	-.12	-.28	-.15	.32	.41	.24	.30	.55
Resultaten bespreken	-.78**	-.76**	.73**	.57	.08	.49	.06	-.43	.56	-.12	.33	.03	.35	-.09	.35	-.23	.23	.15	-.10	.27	-.48	-.27	-.69**	-.28	-.04	-.18
Werkwijzen/kennis delen	-.49	-.68**	.38	.56	-.28	-.02	.49	.25	.72**	-.67**	.28	.47	.50	.28	.00	-.28	.79**	.58	.14	-.04	-.32	-.14	-.13	.31	.66**	.72**
Negatief reageren op ideeën	-.05	-.30	.19	-.02	.49	.64*	.05	-.36	.10	-.44	.00	.12	.57	.13	.46	.11	.00	-.05	-.13	.54	-.08	-.34	-.03	-.16	-.32	.24
Taken herverdelen	-.34	-.32	.64*	.29	-.39	-.30	-.16	-.39	.13	-.44	.14	.37	.35	.09	.22	-.32	.42	.25	.64*	.32	-.52	-.33	-.36	.16	.64*	-.05

Correlation Table Field Observation, page 3 of 3

	Meeting Behaviors						**Workplace Behaviors**																										
	Werkwijzen en kennis delen	Negatief reageren op ideeën	Taken herverdelen	Onvoorbereid of afwezig zijn	Geroesemoes	Dezelfde mensen aandacht geven	Ontspannen Gedrag	Persoonlijke Aandacht	Enthousiasme	Eens Zijn	Agressie	Gesloten lichaamshouding	Confrontatie ontwijken	Verzet tegen taak	Verantwoordelijkheid wijzen	Schuld Afschuiven	Fouten ontkennen	Afpraken niet nakomen	Luisteren	Onderbreken	Feedback geven en vragen	Grappen over onenigheid	Enthousiasme koel beantwoorden	Open vraag stellen	Hulp vragen of aanbieden	Sparren of kort overleggen	Verbetermogelijkheid zoeken	Resultaten bespreken	Werkwijzen en kennis delen	Negatief reageren op ideeën
Meeting Behaviors																																	
Werkwijzen/kennis delen	1.0																																
Negatief reageren	.43	1.0																															
Taken herverdelen	.02	.35	1.0																														
Onvoorbereid/afwezig	.09	.28	.14	1.0																													
Geroesemoes	.27	.88***	.07	.18	1.0																												
Dezelfden aandacht geven	-.12	-.80***	-.50	-.41	-.53	1.0																											
Workplace Behaviors																																	
Ontspannen Gedrag	-.42	.07	.60*	.37	-.10	-.32	1.0																										
Persoonlijke Aandacht	-.37	-.63*	-.24	.49	-.60*	.37	.02	1.0																									
Enthousiasme	-.38	-.07	.01	.56	-.20	-.23	.73**	.33	1.0																								
Eens Zijn	.58*	-.23	-.08	-.44	-.35	.12	-.43	-.05	-.27	1.0																							
Agressie	.25	-.15	-.84**	.04	-.03	.25	-.80**	.33	-.19	.35	1.0																						
Gesloten lichaamshouding	.14	-.41	-.24	-.28	-.27	.65*	-.27	.27	-.27	.14	.14	1.0																					
Confrontatie ontwijken	.23	.32	-.37	.37	.30	-.37	-.39	.27	.14	.25	.71**	-.19	1.0																				
Verzet tegen taak	.22	.80***	.01	.43	.78**	-.68*	-.20	-.20	-.05	-.18	.29	-.55	.71**	1.0																			
Verantwoordelijkheid wijzen	.60*	.61*	.31	.17	.48	-.52	-.25	-.16	-.25	.39	.18	-.21	.64*	.70**	1.0																		
Schuld Afschuiven	.62*	.24	.33	-.23	.12	.12	-.25	-.30	-.54	.34	-.08	.00	-.01	.18	.60*	1.0																	
Fouten ontkennen	-.05	.42	.36	-.57	.46	-.28	-.04	-.80*	-.53	-.18	-.44	-.30	-.45	.13	.00	.29	1.0																
Afpraken niet nakomen	.50	.33	.21	-.38	.24	-.23	-.48	-.43	-.63*	.52	.15	-.36	.24	.42	.68**	.76**	.47	1.0															
Luisteren	.10	.00	-.41	-.10	-.08	-.28	-.12	-.12	.37	.50	.43	-.41	.46	.13	.05	-.34	-.20	.10	1.0														
Onderbreken	.43	-.12	.07	-.66*	-.27	.14	-.27	-.25	-.28	.82**	.08	.14	.09	-.20	.38	.58	.11	.61*	.30	1.0													
Feedback geven/vragen	.28	-.05	.01	-.16	-.23	-.26	-.21	-.02	.03	.76**	.31	-.48	.46	.19	.47	.25	-.10	.63*	.70**	.64*	1.0												
Grappen over onenigheid	-.20	.58*	.40	.68**	.58*	-.73*	.38	-.07	.25	-.58*	-.28	-.55	.14	.60*	.19	-.29	.13	-.14	-.13	-.73**	-.22	1.0											
Enthousiasme koel beantwoorden	-.75**	-.36	-.25	-.23	-.20	.42	.18	.14	.10	-.63*	-.19	.23	-.45	-.39	-.75**	-.34	.20	-.49	-.34	-.30	-.59*	-.18	1.0									
Open vraag stellen	.52	.15	.32	-.32	-.10	-.24	.15	-.38	.12	.73**	-.18	-.14	.09	-.08	.44	.39	.02	.43	.48	.80**	.66*	-.35	-.58	1.0								
Hulp vragen/aanbieden	.47	-.12	-.38	-.55	-.08	.47	-.23	-.40	-.15	.38	.11	.55	-.25	-.47	-.23	.08	.02	-.10	.20	.43	-.12	-.67*	.03	.38	1.0							
Sparren	-.03	-.63*	-.06	-.83**	-.63*	.58*	-.27	-.08	-.43	.50	-.04	.27	-.48	-.68*	-.32	.29	.27	.30	.02	.65*	.27	-.80**	.25	.27	.38	1.0						
Verbetering zoeken	.32	.09	-.26	-.34	-.03	.00	.02	-.53	.21	.38	.07	-.34	-.02	-.07	-.09	.11	.15	.21	.70**	.46	.46	-.37	-.14	.61*	.56	.26	1.0					
Resultaten bespreken	-.04	.57	-.48	.17	.66*	-.48	-.19	-.23	.22	-.24	.44	-.24	.62*	.65*	.17	-.39	.01	-.10	.47	-.25	-.02	.32	.01	-.14	.03	-.58*	.21	1.0				
Werkwijzen/kennis	.51	.32	.12	.18	.15	-.56	-.13	-.07	.13	.66*	.29	-.34	.64*	.43	.70**	.10	-.27	.42	.64*	.37	.77**	.15	-.90*	.64*	-.08	-.25	.25	.22	1.0			
Negatief reageren	.05	.38	-.19	-.39	.36	-.33	-.44	-.39	-.30	.21	.35	-.48	.46	.56	.41	.31	.46	.71**	.40	.43	.53	-.11	-.05	.20	-.12	.15	.37	.47	.25	1.0		
Taken herverdelen	.42	.64*	.22	.26	.64*	-.37	.11	-.62*	-.10	-.27	-.26	-.36	-.20	.36	.11	.08	.38	.08	-.07	-.41	-.24	.58*	-.34	-.03	.07	-.46	.19	.18	.09	-.13		