

Healthy Suspicion

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Healthy Suspicion: The Value of Low Swift Trust for Information Processing and Performance of Temporary Teams

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This study investigates the team processes that transmit the effect of trust on team performance. Building on the motivated information processing in groups model, we propose that low swift trust increases team members' motivation to process information elaborately, which in turn benefits performance in nonroutine situations. Using a mixed repeated measure design with 40 teams performing routine and nonroutine decision-making tasks under manipulated conditions of low and high swift trust, we find that teams receiving the low swift trust manipulation, processed information more elaborately than teams in the high swift trust condition. This in turn, increased performance in nonroutine tasks but did not influence performance when performing routine tasks. This study extends past individual level research on trust and strategic thinking to the team level and identifies information processing as an important mediator in the trust-team performance relation.

Keywords: swift trust, temporary teams, information processing, performance, MIP-G

Organizations often employ temporary teams (e.g., medical teams, firefighters, crisis management teams) in order to deal with the complexity, dynamism, and uncertainty of their environments (Huber, 2004; Stachowski, Kaplan, & Waller, 2009; Uitdewilligen, Waller, & Zijlstra, 2010). These teams typically consist of skilled experts who work together for a finite time span in order to manage unexpected occurrences and emergencies. In many cases, temporary teams assemble ad hoc on an “as needed” basis to provide a rapid, high-quality solution to complex problems under high levels of uncertainty. In order to do this effectively, team members need to tightly coordinate their actions, rely on each other's contributions and work interdependently toward quick and accurate task execution (Uitdewilligen, Waller, & Pitariu, 2013; Zijlstra, Waller, & Phillips, 2012).

Such interdependencies require trust among team members in order to promote information sharing and facilitate coordinative and cooperative activities (De Jong & Elfring, 2010; Meyerson, Weick, & Kramer, 1996). Previously, trust has been mainly conceptualized as a process that develops over time (e.g., through familiarity, shared experiences, and reciprocal disclosure; Rousseau, Sitkin, Burt, & Camerer, 1998). Yet, in newly formed temporary teams traditional sources of trust are largely absent (Meyerson et al., 1996). In such teams, trust is imported swiftly based on “cognitive processes that emphasize beliefs in the other party's capability, reliability, and dependability” (Crisp & Jarvenpaa, 2013, p. 45). Swift trust thus equips teams with the initial cognitive confidence that is required to work interdependently together but needs verification and calibration through interaction (Crisp & Jarvenpaa, 2013; Jarvenpaa, Knoll, & Leidner, 1998) and is therefore “not so much an interpersonal form as it is a cognitive and action form” (Meyerson et al., 1996, p. 191).

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Although recent meta-analytical evidence suggests a moderate positive correlation between team trust and team performance (Breuer, Hüffmeier, & Hertel, 2016; De Jong, Dirks, & Gillespie, 2016), primary empirical examinations in a temporary team context have yielded mixed findings, suggesting that trust positively impacts performance outcomes in some situations but hinders performance in others (Jarvenpaa, Shaw, & Staples, 2004; Langfred, 2004; Lowry, Schuetzler, Giboney, & Gregory, 2015). However, research on situational contingencies and behavioral processes that follow initial trusting beliefs and that transmit the effect of trust on team performance outcomes remains limited.

In this study, we propose that low levels of swift trust in other members' reliability, competence, and professionalism will increase team members' motivation to process information more elaborately, which in turn benefits performance in nonroutine decision-making tasks. By low swift trust, we refer to low expectations in and a lack of willingness to act upon others words and actions, rather than negative expectations about other's bad intentions, that is, distrust (Lewicki, McAllister, & Bies, 1998). Figure 1 depicts our research model. We provide support for these assumptions in a mixed repeated measure design with 40 student teams performing routine and nonroutine decision-making tasks under manipulated conditions of low and high swift trust. Thereby, we provide important insights into how swift trust influences a team's strategic thinking and reveal contextual factors that limit the benefits of trust in a team context. That is, (a) lower swift trust is associated with more effortful, systematic team information processing and (b) this is cru-

cial for effective performance when teams perform complex nonroutine decision-making tasks.

Thoughts and Actions Under Trust

Previously, scholars have begun to question the universally positive effects of trust. At the individual level, a number of empirical studies provide support for the notion that trust and distrust lead to different information processing tendencies (e.g., Schul, Mayo, & Burnstein, 2004; Schul, Mayo, & Burnstein, 2008). Distrust is generally defined as "confident negative expectations regarding another's conduct" (Lewicki et al., 1998, p. 439) that are associated with fear and a tendency to assume sinister intentions underlying others' words and actions. Findings of these studies revealed that trust increases people's tendency to rely on previously made hypotheses and assumptions and to make use of previous heuristics and categories when making a decision (J. Mayer & Mussweiler, 2011; Posten & Mussweiler, 2013). Distrust on the other hand, was found to increase the activation of multiple categories (Friesen & Sinclair, 2011), to enhance cognitive flexibility (Posten & Mussweiler, 2013), to increase the likelihood of alternative generation (Schul et al., 2004), and to facilitate the development of creative and nonroutine solutions in decision-making tasks (J. Mayer & Mussweiler, 2011; Schul et al., 2008). In other words, information processing tendencies are becoming more complex under distrust, as opposed to trust, because individuals are less likely to take incoming information at face value and are more motivated to examine the credibility of this information by considering alternative explanations. However,

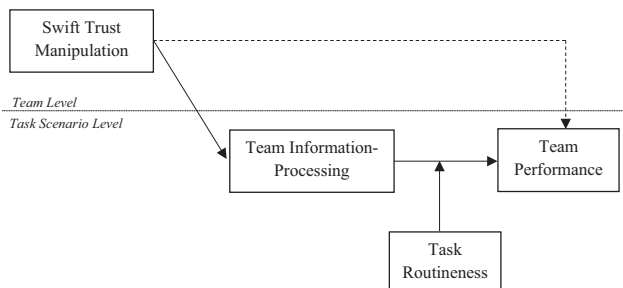


Figure 1. Research model.

although this research offers a promising approach on how a mental state of trust influences individuals' immediate strategic thinking, it remains unclear whether and how these findings can be translated to teams.

Motivated Information Processing in Groups

One prominent theory that offers insight into how teams process information is the motivated information processing in groups model (MIP-G; De Dreu, Nijstad, & van Knippenberg, 2008). The MIP-G regards groups as information processors (see Hinsz, Tindale, & Vollrath, 1997) and assumes that group decision-making is a function of individual- and group-level information processing tendencies. Individual level information processing can be defined as an individual's tendency to "search for, attend to, select, encode, and retrieve information from outside the group boundary, from other group members, and from memory" (De Dreu & Beersma, 2010, p. 1111). These individual information processing tendencies influence group-level information processing, where information is disseminated and combined in order to form a collective decision. In line with dual-process theories of judgment and decision-making (e.g., Evans, 2008; Smith & DeCoster, 2000), the MIP-G assumes that individuals and groups differ in how elaborately and systematically they process information. On the one hand, groups can process information in a heuristic and shallow way; for instance, by relying on past associations or rule of thumbs when sharing and integrating information to come to a decision. On the other hand, group members may process information deeply by engaging in full exchange of information, detailed assessment of the accuracy of information, and systematic integration of shared information.

Past research has shown that whether a group processes information elaborately depends on the team members' perceived need to do so. For instance, De Dreu and Beersma (2010) found that when group members were confident in their team's ability to make a high-quality decision, teams search and process information in a heuristic manner by relying on short-cuts and previously established routines. However, when teams lacked confidence, members felt a need to receive a rich, thorough, and correct under-

standing of the task in order to ensure good performance.

Swift Trust and Motivated Information Processing in Temporary Teams

Extending this argument and building on individual level study findings, we propose that the level of swift trust in temporary teams may be an important precursor for information processing at the team level. In the current study we investigate information-processing in decision-making tasks with an incentive structure that facilitates cooperative motivation (De Dreu & Beersma, 2010; Hollenbeck et al., 2002). Therefore, we focus on low trust rather than distrust among team members, as the latter is associated with the assumption that others have sinister intentions, which is less likely to occur in cooperative settings (Lewicki et al., 1998). Yet, although we would like to point out that we regard distrust and low trust as conceptually different (see also Dimoka, 2010; Lewicki et al., 1998); we assume that both constructs are likely to manifest similarly at a behavioral level in temporary teams operating in an environment in which task characteristics and incentive structure facilitate cooperation. That is, individuals follow a more complex information processing strategy when experiencing low trust in other members in order to deal with potentially invalid information (De Dreu et al., 2008; Schul et al., 2004, 2008). Hence, under low trust conditions, team members are likely to engage in scrutiny of each other's inputs and engage in effortful integration of information in order to achieve an accurate understanding of the situation. On the other hand, trusting team members and perceiving the team to be competent and capable should increase team members' belief in the ability of the team to attain its goals successfully (De Jong et al., 2016; Marks, Mathieu, & Zaccaro, 2001) and thus, lower their tendency to systematically process and share information. A lack of swift trust, however, should raise team member's doubts about whether to rely on the input of other team members. Thereby low swift trust increases team members' tendencies to process information in a thorough and elaborate manner.

Recent empirical studies provide first evidence in favor of this prediction. For instance, in a study by Langfred (2004), self-managing

MBA student teams that reported low trust in their team members, reported high monitoring behavior in comparison with lower trusting teams. Monitoring in turn was positively related to performance when team members reported high individual autonomy but decreased performance when individual autonomy was low. Langfred (2004) explained his findings by arguing that the more independently and autonomously team members work, the more monitoring is needed to avoid coordination losses and mistakes. Similarly, an experimental study on virtual teams by Lowry, Schuetzler, Giboney, and Gregory (2015) found that teams receiving a distrust manipulation outperformed teams that did not receive the manipulation in a nonroutine decision-making task. However, there was no difference in performance between the teams when performing routine tasks. In line with Schul, Mayo, and Burnstein's (2008) findings the authors argue that distrust "heightens the use of non-routine mental actions that are valuable in solving non-routine problems" (Lowry et al., 2015, p. 742). We extend this notion and argue that high initial trust in other team members' credibility, competence, and reliability is likely to manifest itself in a shallow and heuristic way of information processing—less complexity in sharing and integrating information and a reliance on routinized communication patterns. Low swift trust on the other hand, is likely to increase people's awareness to team members' inputs and reduces their confidence to be sufficiently prepared to solve a task successfully. Therefore, we propose:

Hypothesis 1: Teams receiving the low swift trust manipulation will engage in more elaborate information processing at the team level, in comparison with teams receiving the high swift trust manipulation.

Swift Trust and Team Performance: Task Situation as a Moderator

Next to examining the effects of swift trust on team information processing strategies, another objective of this research is to investigate why and when team information processing strategies, and therewith swift trust, benefit, or hurt team performance. Past work on the MIP-G has identified situational factors that determine the effectiveness of the two information processing

modes of teams (i.e., shallow vs. deep processing). De Dreu, Nijstad, and van Knippenberg (2008) argued that when teams are performing routine tasks, team member inputs are less crucial to reach a high-quality decision, and consequently a thorough dissemination and integration of information is also less critical. Routine tasks are familiar to the team and team members can deal with them effectively by using the same interaction patterns that have previously proven to be successful. In such predictable environments, deep-level information processing is not required and teams can rely on established heuristics and routines to reach a high-quality decision. In fact, a shallow and heuristic way of processing is preferred in such situations, because it allows team members to devote time and energy into the quick and efficient coordination of information exchange (De Dreu & Beersma, 2010; Tasa, Taggar, & Seijts, 2007).

Conversely, when working on nonroutine tasks, a thorough and systematic analysis of the available information is needed to perform successfully: Nonroutine events are complex and require an adjustment of previously established interaction patterns (Uitdewilligen et al., 2013). Thus, to perform successfully, team members need to exchange additional insights and reprioritize information to adjust their decision-making strategy. As a matter of fact, prior research has shown that team performance particularly benefits from thorough information dissemination and alternative thinking when teams execute nonroutine decision-making tasks (De Dreu & Beersma, 2010; Kerschreiter, Schulz-Hardt, Mojzisch, & Frey, 2008). Taken together, elaborate information processing is likely to enable teams to make more accurate decisions when performing nonroutine tasks. However, when performing routine tasks, heuristic information processing should lead to equally accurate decisions. Following this line of reasoning and building on previous research, we propose:

Hypothesis 2: Task routineness moderates the relationship between team information processing and team performance. Specifically, we expect the relationship to be significantly weaker when teams are working on a routine task compared to when teams are working on a nonroutine task.

Method

Sample

The sample consisted of 136 undergraduate psychology students from a Western European University, who took part in this study as part of an elective course in their curriculum. Students were randomly assigned to 40 three- or four-person teams. Participant’s age varied between 19 and 27 years ($M = 21.97, SD = 1.57$). The sample was primarily female (73.2%) and from similar cultural backgrounds (43.5% Dutch, 42.0% German, 10.2% other). Demographical data was missing from six participants, who did not fill in the prequestionnaire. Each team completed four scenarios of the simulation task (described below) for a total of 156 team level observations (one audio recording file was disrupted). The best three performing teams received a small prize in a subsequent lecture; no other incentives were offered.

Task Overview

Teams worked with a modified version of the Maastricht University Emergency Management Simulation (MUEMS). MUEMS is designed to simulate complex real-world decision-making scenarios, and is comparable with other decision making tasks used in experimental research (e.g., Homan, van Knippenberg, Van Kleef, & De Dreu, 2007b; Mohammed, Hamilton, Tesler, Mancuso, & McNeese, 2015). Participants were placed in the role of first-responders to emergency situations and must work together as a team to make optimal decisions. The overall aim of each task scenario is to minimize the impact of fires, while keeping the amount of costs as minimal as possible. For the purpose of this study, MUEMS teams consisted of a fire

commander, a chemical specialist, and a police officer, each holding unique knowledge and expertise necessary for making task related decisions. The distribution of knowledge was unknown to teams prior to interaction, thereby creating an individual level problem comparable to a hidden profile situation (Stasser & Titus, 1985, 1987). For example, the fire commander possessed knowledge about the number of available fire trucks in each fire station, the police officer had information about which roads to block in order to get to these fire stations, and the chemical specialist could calculate the risk of other buildings catching fire. To simulate individual expertise, participants learned how to make simple cost calculations relating to their role. For instance, the fire commander learned to calculate building damage costs, the chemical specialist learned how to calculate the effects of various chemicals, and the police officer learned when to close routes and how much costs was associated with this. All costs were weighted equally in the final performance score, representing a cooperative motive structure.

Procedure

An overview about the study procedure is depicted in Figure 2. The study received ethical approval by the local ethical review board (#ECP-145 08_02_2013_A1).

Pre-phase. One week prior to the experimental session, students were invited to fill in an online questionnaire to collect demographical and personality data of participants (i.e., age, gender, nationality, disposition to trust). Participants were randomly assigned to groups of nine to a timeslot for an experimental session in the laboratory. Upon arrival, we randomly divided

Pre-Phase	Individual Training Phase	Team Training Phase	Team Performance Phase
- Pre-Questionnaire <i>After entering the lab:</i> - Team Formation - Role Distribution	- Role Instructions - Individual Role Training - Individual Role Performance Test	- Scenario 1 - Questionnaire - Scenario 2	- Situation Manipulation - Scenario 3 & 4 - Trust Manipulation Reinforcement - Scenario 5 & 6 - Final Questionnaire

Figure 2. Procedural overview.

participants into two or three teams and randomly assigned them to the different individual roles. In case a student did not show up to the session, four-person teams were formed, whereby two persons were assigned to the role of the fire commander.

Individual training phase. Participants received information on their role and instructions on how to conduct role-specific cost calculations by watching a short explanatory video. This information was also summarized on a role instruction sheet and handed out to participants. Subsequently, students answered questions that tested their individual role expertise (hereafter referred to as *role test*). The role questions were asked in multiple choice format and were recorded digitally via an online platform.

Trust manipulation. Team members received the trust manipulation after the individual training through a false-feedback protocol prior to team interaction. The wording of the manipulation was based on an established cognitive trust measure (McAllister, 1995). Participants received false feedback about their own, as well as their team members' performance in the role knowledge test. In the high swift trust condition, participants were told that both, their own and their team members' performance in the individual role knowledge test provided a good basis for the upcoming team tasks. In the low swift trust condition, participants were told that their own performance provided a good basis for the upcoming team tasks, whereas at least one of their team members made multiple mistakes during the role performance tests, implying that they may have not fully grasped the breadth of their role tasks and responsibilities. Knowledge about other team members' ability on a relevant task has been argued to be an important precursor of people's initial trusting beliefs prior to team interaction (McKnight, Cummings, & Chervany, 1998; Webber, 2008). To keep the manipulation salient to participants throughout the full experimental session, the experimenter reinforced this manipulation verbally after participants completed the third scenario. At that time, teams in the high trust condition were told that everyone seems to have understood their individual role, whereas in the low trust condition, team members were told that everyone should check their individual role calculations more carefully during the upcoming team tasks.

Team training phase. After the trust manipulation, team members sat around one table and received two task scenarios, which they had to solve together as a team. Thereby, team members should develop an understanding of how to integrate their unique information and expertise and how to coordinate their actions in order to reach a mutual decision. In between the two scenarios, participants returned to their computers to fill in a short questionnaire.

Team performance phase. Every team worked on four scenarios during the performance phase, two routine scenarios and two nonroutine scenarios, which they performed in random order. Routine scenarios were similar to the tasks teams received during the training phase, whereas nonroutine scenarios entailed novel elements (e.g., a bomb threat), which required a reprioritization of information and an adjustment of established strategies and tactics to solve the task successfully. Hence, routine scenarios were more predictable and less complex than nonroutine scenarios overall. Participants received a total of 10 min per task and a 2-min break between scenarios. Each participant was required to fill in an answer sheet unique to their role, in which they indicated the team's decision before the time limit expired. After participants finished the third scenario, they received a verbal manipulation reinforcement by the experimenter respective to their assigned condition (see Trust Manipulation section). Subsequent to this, teams received the final three scenarios.

Measures

Manipulation check. The manipulation check consisted of a validated three-item measure for cognitive trust ($\alpha = .81$; Webber, 2008), with the wording slightly adapted to be appropriate for the present study. Answers were given on a 7-point Likert scale (from 1 = *strongly disagree* to 7 = *strongly agree*). An example item is: "Given the track record of my team members, I see no reason to doubt their competence and preparation for the upcoming team task." Cognitive trust was measured after the first team interaction task during the team training phase. In line with previous studies (e.g., Langfred, 2004), we regard trust at the team level as the aggregated trust perceptions of individual team members in other members. In

other words, team trust reflects the summation of individual trust regardless of the variance among members—an additive model—and does not derive meaning from the consensus among individual's perception—a directive consensus model (Chan, 1998). Hence, to assess cognitive trust at the team level, we calculated the average of individual team members' judgments.

Team information processing. Three master students coded team information processing behavior based on audio recordings made during the experimental team sessions. Out of the 40 recordings, one audio file was corrupted. Therefore, information-processing data for this team was not included in the analysis. For the coding, the raters used a behavioral coding scheme that we developed for the purpose of this study. The scheme was based on an existing coding scheme for group information elaboration developed by Homan, van Knippenberg, Van Kleef, and De Dreu (2007a), who define information processing at the team level as the extent to which information is disseminated, processed, and integrated to make decisions. Following this definition, our coding scheme consisted of three main categories: information dissemination, information integration, and information generation. Information dissemination involved sharing simple facts or decision-making without providing context or reasoning. Information integration was coded when team members built up on each other's statements to for example, prioritize information or to contextualize information pieces. Information generation occurred when teams did not only integrate their different input's but also identified current problems and generated new ideas and strategies in order to solve them. Consistent with the approach that higher scores represent higher levels of information processing (Homan et al., 2007a), all three categories received a different weighing score respective to their level of information processing, that is, dissemination received a weighing score of 1, integration a score of 2 and generation received a weighing score of 3. To ensure coding validity 20% of the recordings were rated by all three coders. The resulting ICC was .96, which exceeds the conventionally acceptable value of .70 (Dixon & Cunningham, 2006).

Team performance. Decision accuracy per scenario represents the costs a team made per scenario relative to the minimal amount of costs they would have incurred in case they had made the optimal combination of decisions. Scores were z-standardized over each scenario and inverted, so that higher scores reflect higher team performance.

Control Variables

Disposition to trust. To control for individuals having inherently higher levels of trust, individual disposition to trust was controlled for, using a four-item scale (Gefen, 2000). Answers were provided on a 7-point Likert scale (ranging from 1 = *strongly disagree* to 7 = *strongly agree*). We measured individual's disposition to trust via a prequestionnaire that participants filled in 1 week prior to the start of the experiment. An example item of this scale is: "I generally trust people unless they give me reason not to." Reliability analysis revealed a Cronbach's alpha of 0.81.

Familiarity. To control for potential familiarity among team members we adapted a four-item measure by Webber (2008) to the team level. Participants were asked to evaluate their familiarity with all their team members on average (e.g., "How familiar are you with the strengths and weaknesses of you team members?"), using a 5-point Likert scale (ranging from 1 = *I am not familiar* to 5 = *I am very familiar*), with Cronbach's alpha = .81. To assess within-group agreement we calculated r_{wg} , using the expected random variance for a 5-point scale with a null distribution $\sigma_{EU}^2 = 2$; Bliese, 2000). The mean r_{wg} was .75, which is considered acceptable for aggregation (Dixon & Cunningham, 2006).

Team size. We controlled for team size, as team size varied from three to four members depending on the amount of students showing up to the experimental session.

Design and Statistical Analyses

The experimental setup consisted of a mixed repeated measure design with trust being manipulated between and situations being manipulated within teams. This resulted in four different task scenarios nested within teams. Given the nested data structure, we used a hierarchical linear modeling (HLM)

approach (Raudenbush & Bryk, 2002) to test our hypotheses. The dependent variable (team performance), mediating (team information processing), and moderating variable (routineness of the task scenario) were scenario-level variables (Level 1), whereas the independent variable (swift trust) was a team level variable (Level 2). Consequently, our second moderation hypothesis (Hypothesis 3) assumed cross-level interaction (Klein, Dansereau, & Hall, 1994). We estimated our models with the nlme package in R (Version 3.4.0), which is well suited to conduct multi-level modeling (Bliese, 2016).

To test Hypothesis 1, we first estimated the intercept-only model (null model) for the dependent variable (*here*: team information processing), while adding the control variables as predictors to the model. This served as a baseline model to which a subsequent model with the manipulated trust condition as an additional predictor was compared with, using a maximum likelihood ratio statistic (Kreft & de Leeuw, 1998). We tested for significant model fit increase, using random-intercept, fixed-slope models (Bliese, 2016). To test our moderation hypotheses (Hypothesis 2), we added the interaction term to the model and allowed the slope to vary across teams (random-intercept, random-slope model; Bliese, 2016). Simpler models that included the independent variables as predictors only, served as means of comparisons for a more complex model that included the interaction term. Again, we compared models us-

ing a maximum likelihood ratio statistic. To examine the effects of the slopes separately, we conducted a simple slope analysis with the Pequod package in R (Version 3.4.0).

Results

Manipulation Check and Descriptive Statistics

Results of an independent samples *t* test revealed that teams in the low trust condition ($M = 5.56$, $SD = .62$) did not report significantly lower levels of cognitive trust than in the high trust condition ($M = 5.37$, $SD = .87$), $t(38) = -.78$, $p = .44$, after the first team interaction. This suggests a potential problem with the validity of our trust manipulation. However, as detailed below we did obtain a significant main effect of trust on information processing, as predicted, which provides evidence for the validity of our manipulation. We discuss this issue in depth in the Discussion section.

For initial data examination, we conducted a descriptive analysis. Table 1 displays means, standard deviations, and intercorrelations among study variables. Swift trust refers to the manipulated condition. Because task routineness was manipulated within teams, average scores across routine and nonroutine tasks were computed for team information processing and team performance to assess correlations of interest among study variables. We inverted performance scores by multiplying values by -1 ,

Table 1
Descriptive Statistics and Correlations Between Study Variables

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8
1. Swift trust condition	0	1	—							
2. Info-Processing _{routine}	93.03	31.20	-.44**	—						
3. Info-Processing _{non-routine}	87.71	24.33	-.39*	.54**	—					
4. Performance _{routine}	-44.34	16.81	.10	.15	—	—				
5. Performance _{non-routine}	-170.28	36.23	.02	—	.10	.45**	—			
6. Disposition to trust	5.19	.51	.16	-.16	-.15	.15	.18	—		
7. Familiarity	1.80	.50	.10	-.01	.01	-.08	.29 [†]	.21	—	
8. Team size	3.4	.50	.04	-.10	-.12	.23	.29 [†]	-.25	-.18	—

Note. $N = 40$ at the team level. Swift trust is a dichotomous variable comparing teams in the low swift trust condition (coded -1) to teams in the high swift trust (coded $+1$). Average scores across routine and nonroutine tasks were computed for information processing and performance at the team level. Performance scores were inverted by multiplying values by -1 , such that lower costs represent higher performance.

[†] $p < .10$ (two-tailed). * $p < .05$ (two-tailed). ** $p < .01$ (two-tailed). *** $p < .001$ (two-tailed).

such that lower costs represent higher performance.

Hypothesis Testing

Results of the analysis testing Hypothesis 1 are reported in Table 2. We added disposition to trust, familiarity, and team size as control variables to the models. As can be derived from Table 2, Hypothesis 1 was supported: Manipulated swift trust was directly negatively related to information processing at the team level ($\beta = -0.33$, $SE = 0.11$, $t = -2.99$, $p = .005$). Results of the data analysis testing Hypothesis 2 are displayed in Table 3. As expected, there was a significant interaction between team information processing and task routineness ($\beta = -0.09$, $SE = 0.03$, $t = -2.53$, $p = .01$).

To examine the nature of this interaction, we plotted the interaction pattern (see Figure 3) and conducted a simple slope analysis. Results revealed that for routine tasks, information processing did not significantly impact performance ($\beta = -0.02$, $SE = 0.05$, $t = 0.37$, $p = .71$). However, when tasks were nonroutine, performance increased significantly for teams that engaged in high information processing ($\beta = 0.16$, $SE = 0.06$, $t = 2.68$, $p = .01$; see Figure 3). Hypothesis 2 was thus supported.

In order to additionally test for the indirect effect of the swift trust condition on team performance via team information processing, we computed two separate indirect effect models for routine and nonroutine tasks. The 2–1–1 multilevel mediation models were tested with

multilevel structural equation modeling (MSEM; Preacher, Zhang, & Zyphur, 2011), using the statistical software Mplus Version 7 (Muthén & Muthén, 2012). Results of the analysis are reported in Table 4.

The analysis revealed a significant indirect effect for nonroutine tasks ($\beta = -0.06$, 95% CI $[-0.128, -0.010]$), indicating that swift trust affects team performance indirectly via team information processing in nonroutine tasks. For routine tasks, the results show a nonsignificant indirect effect of swift trust on team performance via information processing ($\beta = -0.01$, 95% CI $[-0.03, 0.02]$). The direct effect of information processing on team performance was also not significant ($\beta = 0.02$, 95% CI $[-0.04, 0.08]$), whereas the direct effect of swift trust on information processing ($\beta = -0.39$, 95% CI $[-0.65, -0.14]$) was significant. In line with the preceding analyses conducted to test the study hypotheses, these results suggest that swift trust directly negatively affects information processing at the team level irrespective of the type of decision-making task and indirectly affects performance via information processing only in nonroutine tasks.

Discussion

In today's work environments, experts from various fields are often assembled for a finite time span in order to deal with complex decision-making problems. Previously, it has been shown that trust among such temporary team

Table 2
Multilevel Models Predicting Team Information Processing From the Swift Trust Manipulation

Fixed effects	Null model			Model 1		
	Estimate	SE	<i>t</i>	Estimate	SE	<i>t</i>
Intercept	2.41	1.53	1.57	1.27	.33	.90
Disposition to trust	-.32	.26	-1.27	-.18	.23	-.75
Familiarity	-.35	.26	-1.37	-.01	.22	-.03
Team size	-.05	.25	-.22	-.24	.23	-1.03
Swift trust				-.33	.11	-2.99**
-2 × LL	-206.96			-204.19		
Δ -2 × LL				2.77*		

Note. Models are random intercept, fixed slope models. $N = 156$ at the task scenario level; $N = 39$ at the team level. Swift trust: Low swift trust condition coded -1; high swift trust condition coded +1. Δ = difference; SE = standard error; LL = log likelihood.

* $p < .05$ (two-tailed). ** $p < .01$ (two-tailed).

Table 3
Multilevel Models Predicting Team Performance by Team Information Processing, Task Routineness, and Their Interaction

Variable	Model 1			Model 2			Model 3		
	Estimate	SE	<i>t</i>	Estimate	SE	<i>t</i>	Estimate	SE	<i>t</i>
Intercept	.00	.08	-.05	.00	.05	.08	.01	.05	.21
Information processing	.15	.08	-1.83 [†]	.07	.04	1.82 [†]	.09	.04	2.14*
Task routineness				.86	.03	-26.00***	.86	.03	26.67***
Info-Process × Task Routineness							-.09	.03	-2.53*
-2 × LL	-221.77			-105.58			-104.92		
Δ -2 × LL				116.19***			.66		

Note. Models are random intercept, random slope models. $N = 156$ at the task scenario level; $N = 39$ at the team level. Model 1 was compared with Model 2; Model 2 was compared with Model 3 to estimate model fit increase. Task routineness = routine task coded 1; nonroutine task coded -1. Δ = difference; SE = standard error; LL = log likelihood. [†] $p < .10$ (two-tailed). * $p < .05$ (two-tailed). *** $p < .001$ (two-tailed).

members is likely to influence team performance (Crisp & Jarvenpaa, 2013; Dirks, 1999; Langfred, 2004). However, underlying mechanisms explaining why this relation is positive in some and negative in other contexts remain understudied. With the present study, we inform this gap by investigating information processing at the team level as a potential mediator in the trust–performance relation.

Overall, we find support for the notion that teams receiving a low swift trust manipulation prior to their first team interaction, engaged in significantly more elaborate information processing during following team tasks than teams receiving a high swift trust manipulation. Put differently, teams in the low swift trust manipulation were more willing to expend effort into sharing and integrating information in order to

form a knowledgeable conclusion. Teams receiving a high swift trust manipulation on the other hand, put less effort into systematic information processing, most likely because they quickly perceived incoming information to be sufficient for making an accurate decision (Chaiken, Liberman, & Eagly, 1989). A second aim of this article was to examine whether the effect of elaborate information processing on team performance depends on the routineness of the decision task that teams perform. Using MIP-G as the theoretical foundation, we expected that deep-level information processing benefits team performance in complex, nonroutine decision-making tasks, in which members' inputs are critical to reach a high-quality decision. Our findings provide support for this proposition. In line with previous studies (e.g., De

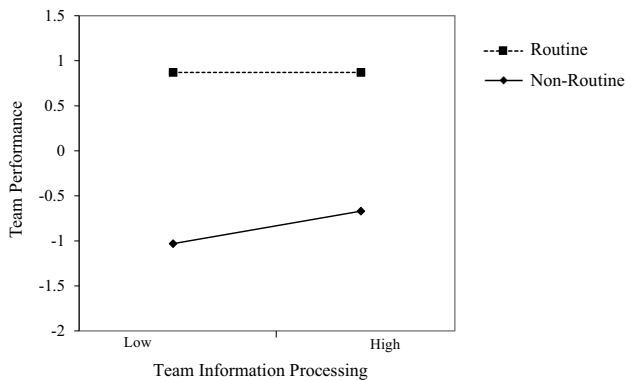


Figure 3. Interaction between task routineness and team information processing on team performance.

Table 4

Multilevel Indirect Effect Models Predicting Team Performance by Swift Trust Condition and Team Information Processing for Routine and Nonroutine Tasks

Variable	Routine tasks				Nonroutine tasks			
	Estimate	SE	<i>t</i>	95% CI [LL, UL]	Estimate	SE	<i>t</i>	95% CI [LL, UL]
Swift trust (ST) → Information processing (IP)	-.39	.13	-3.06**	[-.65, -.14]	-.28	.11	-2.67**	[-.48, -.07]
Information processing (IP) → Team performance (P)	.02	.03	.59	[-.04, .08]	.22	.07	3.37**	[.09, .35]
Indirect effect: ST → IP → P	-.01	.01	-.55	[-.03, .02]	-.06	.03	-2.35*	[-.11, -.01]

Note. All paths were simultaneously tested in two separate 2-1-1 multilevel mediation models with swift trust being a between-level variable (team level) and information processing and performance being within-level variables (task scenario level). $N = 78$ at the task scenario level; $N = 40$ at the team level.

* $p < .05$ (two-tailed). ** $p < .01$ (two-tailed).

Dreu & Beersma, 2010; Lowry et al., 2015), decision accuracy benefited from thorough information dissemination and integration in decision-making tasks that required an adjustment of preestablished routines. For routine tasks in contrast, we find that elaborate information processing does not affect decision accuracy. This result concurs with previous propositions and empirical study findings around the MIP-G (De Dreu & Beersma, 2010; De Dreu, Beersma, Stroebe, & Euwema, 2006; De Dreu et al., 2008): When team tasks are less complex, systematic dissemination and integration of inputs is less important. In fact, elaborate information-processing leads to little new insights in straightforward, well-learned tasks and yet, takes time and is effortful. Therefore, in routine, predictable environments it may be sufficient for teams to rely on heuristics and previously acquired action patterns instead of engaging in deep and systematic information processing.

Theoretical Implications

Building on the answers to our research questions, this study has important theoretical implications. First, the findings contribute to the swift trust literature by showing that initial levels of trust in other team members' competences can significantly influence a team's strategic thinking in a subsequent decision-making task. Although individual level research (e.g., J. Mayer & Mussweiler, 2011; Posten & Mussweiler, 2013; Schul et al., 2004; Schul et al., 2008), as well as a recent team study by Lowry et al. (2015) suggest that trust influences individuals mental actions, few

studies to date have examined behavioral team processes that follow such cognitions. Although the dominant assumption in research continues to be that intrateam trust benefits performance outcomes (De Jong et al., 2016), this research indicates that being suspicious about each other's inputs may prevent an overreliance on simplified strategies that may eventually lead to harmful decisions. A cautious judgment of team members' competences on the other hand, may increase systematic and thorough information processing that can help teams to make a well-informed, accurate decision; particularly when facing nonroutine events. This notion is particularly crucial in the context of temporary teams (e.g., medical surgery teams, firefighting teams), in which any error in decision-making may lead to disastrous consequences. Additionally, our study findings contribute to the MIP-G research by pointing at the importance of swift trust in relation to motivated information processing in groups. Specifically, we introduce swift trust as a person-based antecedent of a group's motivation to process information thoroughly.

Practical Implications

Findings of this study also inform current practice in enhancing temporary team performance. Consistent with theories on biases in decision-making or groupthink (e.g., De Dreu & Carnevale, 2003; Janis & Mann, 1977) our findings indicate that team members should be aware of harmful consequences that may potentially result from too much trust in team members' competences and reliability. Translating this knowledge into team-

work practice, our findings imply that temporary team managers should implement training programs, which increase team members' awareness that in particular situations, inaccurate decisions may result from too much trust in each other's contributions. Hence, although previous researchers have advised to enhance trust among team members through trust-building activities (Long & Sitkin, 2006), our findings suggest that such activities should be complemented with a note of caution that an overreliance on the input of others can have a detrimental effect on team functioning. In order to manage the level of trust effectively, team managers should therefore closely monitor the level of trust in their working teams and initiate training activities when needed. However, we would like to note that the impact of trust on team information processing behavior may change in ongoing work teams, as the nature of trust also changes in the course of team interaction (Webber, 2008). Therefore, managers should take into account the team's life cycle when transferring these suggestions into practice.

Limitations and Future Directions

Like any research, this study has several limitations, which need to be considered when drawing implications from the results and which open areas for future research. One major limitation of the present study is the failed manipulation check. That is, teams in the high swift trust manipulation did not report significantly lower levels of cognitive trust than teams in the high trust condition. While we cannot state with certainty that we actually manipulated trust instead of a related construct (e.g., team potency), our data provides evidence for construct validity of the trust manipulation. Several studies conducted at the individual level of analysis have found support for the notion that trust substantially impacts ones information processing tendency (e.g., J. Mayer & Mussweiler, 2011; Posten & Mussweiler, 2013; Schul et al., 2004, 2008). The fact that we did obtain the predicted main effect of trust on team information processing provides evidence for the construct validity of our trust manipulation.

Moreover, a number of factors can explain the nonsignificant relation between the swift trust manipulation and the trust measure. For instance, one potential reason for the failed manipulation check may have been the timing of

the manipulation check. Participants received the manipulation prior to their first team interaction, and the level of cognitive trust toward their team members was assessed after they have solved their first team task. Consequently, team members may have entered their first team task with intended levels of swift trust. This in turn, may have influenced their interaction patterns (i.e., information processing behavior) at early interaction stages, which set the tone for subsequent interaction during following task scenarios (Zijlstra et al., 2012). However, team members may have adjusted their trusting beliefs in the course of the first team task due to extensive discussion of team member contributions. As Crisp and Jarvenpaa (2013) noted "swift trust is conditional and in need of reinforcement and calibration" (Crisp & Jarvenpaa, 2013, p. 45). This may explain why we did not find significant differences in reported trusting beliefs between the two groups, but did find the hypothesized interaction patterns.

Furthermore, the scale that was used to assess trust perceptions after the first interaction was validated in the context of ongoing teams (Webber, 2008), and may therefore be less applicable to a temporary team context. Considering these arguments, participants' self-reports after the first team interaction may not be an accurate assessment of whether our manipulation successfully influenced swift trust among team members. Yet, in order to ensure that our manipulation in fact led to variations in individual's cognitive trust perceptions, future experimental studies should to test whether such variance was indeed successfully created.

Another limitation of the present study is that findings and implications might be bound to the context of temporary teams, in which trust is imported swiftly rather than developed over a long period of time. Long-term trust typically develops into two distinct dimensions over time (Webber, 2008): an affective dimension based on personal bonds, care and concern for one another, and a cognitive dimension based on competence and reliability (R. C. Mayer, Davis, & Schoorman, 1995; McAllister, 1995). Therefore, the extent to which long-term trust affects team processes and outcomes as suggested in this study is subject to future research. For instance, it is possible that affective trust becomes increasingly important in long-term teams and differently affects team

members' social motivation and information processing behavior (Williams, 2001).

Furthermore, future studies may investigate the impact of gender composition on decision-making processes and outcomes in different types of decision-making scenarios. Previous research suggests that all-female teams tend to choose different decision-making strategies on traditionally male dominated tasks in comparison with mixed-gender or all-male teams (e.g., Rogelberg & Rumery, 1996; LePine, Hollenbeck, Ilgen, Colquitt, & Ellis, 2002; Apestequia, Azmat, & Iriberry, 2012). Given that our sample was primarily female and the decision-making task used is based on roles of traditionally male-dominated occupations (i.e., fire commander, police officer, chemical advisor), it is possible that female teams might respond differently to decision-making tasks that are more gender neutral. Therefore, investigating the impact of gender composition on team information processing and decision-making in male-oriented versus female-oriented or gender neutral tasks would be an interesting avenue for future research.

Conclusion

Temporary teams are becoming increasingly important in our work environments. In order to deal with unexpected challenges, expert members need to share and integrate their individual information and on the basis of this form a mutual decision. With the present research we provide first evidence that swift trust in other members' competence and reliability can influence how elaborate team members share and integrate information. More specifically, we found a negative relation between swift trust and depth of information processing at the team level. Building on the motivated information processing in groups model (De Dreu et al., 2008) we also show that elaborate information processing in turn, benefits performance in nonroutine complex tasks. Altogether, our findings point to the importance of judging team members' competences in a cautious manner. A healthy suspicion toward others' contribution may ultimately enable team success in complex decision-making tasks in a temporary team setting. Having said this, we would like to emphasize that we do not intent to argue against the benefits of trust for team performance but to

reveal boundary conditions of these benefits that shall inform future research and practice.

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