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Trust Development in Swift Starting Action Teams: A Multilevel Framework

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Abstract

Swift starting action teams (STATs) are increasingly prevalent in organizations, and the development of trust is often a critical issue for their effectiveness. However, current theory and research do not provide a clear picture regarding how trust toward the team (i.e., the team as the target) is developed in these settings. The primary contribution of this article is to present a theoretical framework describing how individual-level trust *toward one's team* is developed in STAT contexts. This article integrates several existing trust theories into one comprehensive context-specific multilevel theory of how trust develops in STATs from cognitive, affective, behavioral, and contextual perspectives. This framework furthers our understanding of the unique antecedents of initial trust in STATs, how trust attitudes are adjusted over the short amount of time the team interacts, and how the team context influences this developmental process.

Keywords

teams, theory, trust

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In today's rapidly changing world of work, organizations comprised of a contract-based, temporary workforce are becoming the norm rather than the exception. These types of organizations, which are advantageous because of their flexibility and adaptability, often compose highly interdependent teams of skilled individuals to complete demanding, complex, time-pressured projects. Due to the quickly paced nature of their formation, such teams have been referred to in the literature as *s*wift *s*tarting *a*ction *t*eams (e.g., McKinney, Barker, Smith, & Davis, 2004), which we will abbreviate throughout the article as STATs. STAT is an appropriately suited abbreviation given that one of the defining characteristics of these teams is their immediate and urgent nature, and the term *stat* is frequently used within the medical context to denote urgency. Furthermore, the term *stat* is derived from the Latin word *statim*, which means immediately. As such, STATs can be described as work teams that are characterized by the following features: (a) they are comprised of well-trained experts who have no previous work experience with one another, (b) they perform their team task almost immediately on team formation, and (c) they face high stakes from their inception (McKinney, Barker, Davis, & Smith, 2005).

Even though the traditional examples of STATs used in the literature are military combat units and aircraft flight crews, these types of teams are prevalent worldwide. Project teams are used to address a variety of organizational issues ranging from advising an organization's top management on strategic decisions and organizational change tactics to new product development and short-term research endeavors. Even formally structured, traditional organizations often have a need to contract teams of highly skilled experts to complete time urgent projects to remain competitive in a global market. Surgical teams, technology research teams, disaster response teams, crisis action teams, law enforcement special weapons and tactics (SWAT) teams, firefighting teams (McKinney et al., 2004), shock trauma medical teams, anesthesia teams (Ziegert, Klein, & Xiao, 2001), short-term project teams (Cohen, 1993), and task forces (Hackman, 1990), possess some, if not all, of the exemplary characteristics of STATs.

Research has suggested, both empirically and theoretically, that trust is critical to the effectiveness of work teams (e.g., De Jong & Elfring, 2010; Lee et al., 2010; Salas, Sims, & Burke, 2005; Schaubroeck, Lam, & Peng, 2011). Without appropriately calibrated levels of trust among team members, the implications for STAT functioning may be disastrous and potentially fatal. For instance, consider that 73% of aviation errors happen on the first encounter of pilot and copilot (National Transportation Safety Board, 1994). In other words, in aviation where the majority of teams are STATs by nature, it is that initial moment when the team comes together when the consequences of

inaccurately calibrated trust can be most dire. Extremely low trust can lead to negative consequences such as conflict (e.g., Curşeu & Schruijer, 2010) and extremely high trust can lead to complacency and a reduction in necessary monitoring behavior (e.g., Langfred, 2004). Although the consequences of failure in such teams vary depending on the nature of the team's work, many have the potential to suffer grave repercussions if team processes or performance are subpar. Military combat units and emergency response teams are often formed of complete strangers from different branches and organizations that must perform immediately, frequently in life or death situations. Large research firms often create specialized multidisciplinary research teams in the hopes of discovering the newest scientific or medical breakthrough only to find that disagreements on procedure and purpose create distrust and conflict, which hinders the effectiveness of these teams.

Although trust is clearly an important factor to consider in these types of teams, no single theory exists as to how team-focused trust is developed and maintained in these settings. To that end, the primary goal of this article is to put forth a theoretical framework describing how individual-level trust toward the team develops in STAT contexts. First, we briefly outline the theories that serve as a basis for our integrative, multilevel framework. Second, we present our theoretical framework of trust development in detail along with several testable research propositions drawn from the relationships within this framework. Finally, we conclude with a discussion of the implications of the framework for STAT research and practice.

Theoretical Foundations

Trust has been one of the most widely studied constructs in organizational research, and consequently, multiple models of trust development at various levels of analysis have been developed and tested over the years. Several established theories of interpersonal trust development (Mayer, Davis, & Schoorman, 1995; McAllister, 1995; Meyerson, Weick, & Kramer, 1996; Williams, 2001) along with several of the primary theories of team performance and effectiveness (Ilgen, Hollenbeck, Johnson, & Jundt, 2005; Marks, Mathieu, & Zaccaro, 2001) serve as the foundation for our integrative, multilevel theory. Our focus when reviewing the trust and team literature was on uncovering the primary inputs, mediators, outcomes, and moderators that are involved in the process of trust development in STATs.

Given our purpose is to describe how trust develops and influences performance in the unique context of STATs, a well-known basic model of work team effectiveness serves as the organizing structure for our framework. Specifically, we organize the entire framework around Ilgen and colleagues'
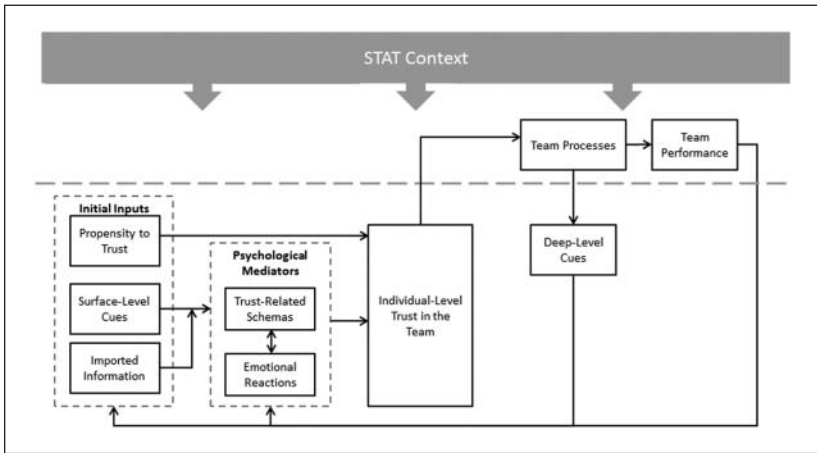
Figure 1. Theoretical framework of trust in STATs

(2005) input-mediator-output-input (IMOI) model of team performance, a version of which has already been validated with virtual teams (Algesheimer, Dholakia, & Gurau, 2011). This model extended the seminal input-process-output (IPO) model (Hackman, 1987; McGrath, 1984) in several ways. First, the term *mediator* is intended to capture a broader range of critical mediating variables including both processes and emergent states. Second, by concluding the model with input, this model calls attention to the idea of cyclical causal feedback. In other words, team outputs, such as team performance, often act as inputs to future team processes and emergent states. Applying these concepts to the development of trust in a STAT context, our framework (Figure 1) proposes that initial surface-level and dispositional inputs influence the development of cognitive, affective, and more distally, attitudinal (i.e., trust) mediators, which then have an impact on the behavioral enactment of team processes and the outcome of team performance, which, in turn, serve as proximal inputs for the adjustment of trust in the team over time. It should be noted that we are not attempting to describe the entire IMOI model of team performance in the current effort, but instead focus only on the antecedents and outcomes of trust, which would be considered one of the many mediating variables within the larger model of team effectiveness.

Mayer and colleagues (1995) put forth what is likely the most well-known, and most studied, model of trust development in the literature. Their model suggests that trust, defined as willingness to be vulnerable to another party, is a function of the trustor's perception of the trustee's ability, benevolence, and

integrity along with his or her own individual propensity to trust. All of these deep-level (i.e., psychological rather than overt; Harrison, Price, Gavin, & Florey, 2002) trustworthiness characteristics combine to predict a person's willingness to be vulnerable to another party. Research has supported the importance of ability, benevolence, and integrity perceptions for the development of trust (e.g., Colquitt, Scott, & LePine, 2007). Therefore, this particular model of trust development provides a solid foundation to begin understanding the development of trust toward the team in a STAT context based on the perceptions of the ability, benevolence, and integrity of the team. However, an underlying assumption of this model is that involved parties have sufficient time to determine this deep-level information about the party to be trusted. Unfortunately, the fast-paced, "hit-the-ground-running" nature of STATs means that the team members likely will not have enough time to accurately perceive and judge such deep-level characteristics about the team when it is first formed. Therefore, this theory is not sufficient on its own to fully describe the development of trust in STATs, especially in the initial stages of team formation. Initial levels of trust in the team must be based on more surface-level characteristics that can be quickly perceived.

Meyerson and colleagues (1996) were some of the first researchers to examine the idea that trust can be developed quickly based on more surface-level cues. They refer to this phenomenon as *swift trust* and define it as the unique form of trust that develops in temporary systems. The authors posit that because there is not enough time to perceive deep-level trust cues in temporary systems, expectations are "imported" from other settings, and therefore, predispositions, categorical assumptions, and implicit theories are inherently critical to the trust development process in these settings. The primary assumption of their conceptualization of swift trust in temporary systems is that it develops in response to a different set of antecedents than the trust literature usually examines. We make similar assumptions regarding trust development in STATs and, therefore, use this theory as a basis for the initial inputs in our framework.

In another theoretical endeavor that is directly relevant to a context-specific theory of trust in teams, Williams (2001) developed a theory of how group membership influences perceptions of trustworthiness via both cognition (i.e., the mental processing of perceptions) and affect (i.e., subjective emotional experiences or states such as anger, joy, disgust). At the most basic level, this theory suggests that people form initial trust attitudes toward others in a group based on affect and cognition related to in-group/out-group dynamics and category-driven processing. In other words, the extent to which an individual feels and perceives a trustee to be a part of his or her social

in-group (i.e., categorized as within the same social group as the trustor) or out-group (i.e., categorized as outside of the social group of the trustor) partly determines his or her initial trust toward the individual. This theory provides a basis for explaining how individuals bring information that is based on past experiences and predispositions into a STAT setting and then translate that information into initial levels of trust toward the team.

Finally, the definition of swift starting action teams calls attention to several contextual variables that must be considered to fully understand the trust development process. We pull from this understanding of STATs and the systems view of teams in general (e.g., McGrath, Arrow, & Berdhal, 2000) to develop a focus on the moderating influence of several environmental characteristics that are unique to STATs within our framework. First, it is important to note that STATs are teams, which means that leadership will be a critical component for success. Research has found that leaders often have a significant influence on trust in organizational settings (e.g., Lau & Liden, 2008; Schaubroeck et al., 2011). Therefore, we pay particular attention to the influence of team leadership for trust in STATs. Second, STATs perform almost immediately in high stakes situations. Time pressure and high levels of risk combine to create an uncertain task environment. This uncertainty will have a significant impact on the development and nature of trust in STATs.

Dynamic, Multilevel Framework of Trust Development in STATs

The theoretical framework we now present integrates key components of the existing theories just described into a multilevel model of individual-level trust development in STATs. We first describe the basic inputs, mediators, and outcomes associated with individual-level trust in the team. Second, we describe how trust at the individual level then influences the team members' enactment of team processes, and how these team processes serve as cyclical feedback that is used to continually adjust trust in the STAT at the individual level. Finally, focus is placed on explaining how the context in which a STAT is embedded will influence this entire trust development process.

The drivers of trust change depending on the point in time at which the STAT is being observed. Based on the IMOI organization of our framework, it is the input phase where we believe the development of trust will be most critical and unique in STAT situations. We contend that at the initial formation of STATs, it will be propensity to trust, surface-level cues, and imported information that combine to predict trust rather than perceptions of deep-level trustworthiness characteristics. It will not be until the

mediator-outcome phase of STAT development when the initial level of trust toward the team will be adjusted, to the extent that time allows, based on the enactment of team processes and the perception of deep-level cues that become influential as the team members are able to observe one another's behavior. Finally, in the outcome-input phase, the team has completed its proximal tasks and is likely engaging in some level of postperformance reflection, and this feedback will affect trust development in subsequent STAT contexts. Each of the components of the IMOI-based trust development framework is broken down into more detail in the following sections, along with the theoretical rationale for each of the research propositions.

The Initial Inputs of Trust Development in STAT Contexts

In the earliest phase of the STAT lifecycle, the initial inputs of trust are perceived and encoded into the psychological mediators that lead to subsequent levels of trust toward the team. It is this phase of trust development that looks most markedly different among STAT contexts compared to more traditional theories of trust development. STATs experience immediate performance pressures that make it difficult to build trust in the way traditionally conceptualized in other models of trust (e.g., Lewicki & Bunker, 1995; Mayer et al., 1995). However, we posit that there is a set of initial information that each team member brings in with him or her that will influence his or her formation of trust attitudes toward the team.

Social psychology has been studying the process of interpersonal impression formation for some time, and research has shown that attitudes, such as trust, can be quickly formed toward other parties without people being cognizant of the formation of these attitudes (McCulloch, Ferguson, Kawada, & Bargh, 2008). Individuals use both data from the immediate environment and preformed expectancies to form initial impressions of others (Fiske, 1993). The continuum model of impression formation posits that individuals are especially likely to make category-based impressions in time-driven situations when they have very little other information (Fiske & Neuberg, 1990), such as during the initial formation of a STAT. Assuming a homologous relationship (i.e., having a same or similar relationship across levels; Kozlowski & Klein, 2000) between trust development toward individuals and trust development toward the team, these social psychological theories can be used to explain the development of initial trust toward the team in STATs. Consequently, one of the basic assumptions of our theory is that in the absence of deep-level trustworthiness information during the early stages of team formation, team members in STAT contexts must depend on their own dispositional

tendencies, quickly discernable surface-level cues, and imported trust-related information to determine their initial levels of category-based trust (Williams, 2001) toward the team.

Propensity to trust is an individual difference variable that describes the baseline level of trust an individual is willing to extend to those with whom he or she interacts even before he or she knows anything about that party (Burke, Sims, Lazzara, & Salas, 2007). Mayer and colleagues (1995) discuss propensity to trust as a stable individual difference likely to influence the development of trust and define it as "the general willingness to trust others" (p. 715). They suggest that the higher an individual's propensity to trust, the higher trust for others would be prior to the availability of other information on which to base trust judgments. In a STAT situation, the trustworthiness of the team based on ability, benevolence, and/or integrity is by definition very ambiguous, given that there is very little or no prior knowledge or history on which to build these deep-level assessments of trustworthiness. Therefore, building off the theory put forth by Mayer and colleagues (1995), it is expected that propensity to trust will play a critical, and direct, role in determining initial trust toward the team since team members will have almost no prior knowledge on which to base their trust.

Our framework expands beyond the model put forth by Mayer and colleagues (1995) in that propensity to trust will not be the only input into initial trust attitudes formed prior to experience working with the team. Team members will also take into account the small amount of information from the environment when the STAT is first formed. In general, the only cues and information that will be immediately perceivable in the environment prior to interaction will be surface-level, observable demographic traits. Most often discussed in diversity research, *surface-level* refers to all overt demographic characteristics present in a team such as ethnicity, age, or gender (Bell, Villado, Lukasik, Belau, & Briggs, 2011; Harrison et al., 2002; Stahl, Maznevski, Voigt, & Jonsen, 2010). Research has found that the surface-level diversity of a team does have a small, though significant, negative impact on team performance (Joshi & Roh, 2009), and a negative impact on communication effectiveness (Stahl et al., 2010). Others have found little or no relationship between surface-level diversity in teams and various outcomes, such as social integration and performance (e.g., Horwitz & Horwitz, 2007; Webber & Donahue, 2001), making the relationship between surface-level diversity in a team and performance less than clear. We suspect that the issue resides somewhere in the black box between diversity and performance, and that trust may play a key role in the relationship as is suggested by the research of Peters and Karren (2009) who found that trust moderated the relationship between functional diversity and team performance. Specifically, we expect that the

team members' perceptions of the surface-level cues in the team, and their subsequent cognitive interpretations and affective reactions, will in part determine initial levels of trust toward the team.

Imported information will also have an impact in determining initial trust in STATs. Imported information can be defined as the preexisting knowledge, stereotypes, and preconceptions stored in the team members' memories. Imported information can be derived from two primary sources: previous personal experiences and third-party information provided by trusted sources. Although the theoretical framework assumes that the members of a STAT have not worked together as an intact team previously, this assumption does not necessarily mean that the team members have never worked in similar situations with similar types of people. Often, STAT members are in essence "serial" STAT members (e.g., aircrew members, emergency response workers) who are continuously placed into new STAT contexts with new tasks to tackle and new teammates to work with. Each performance experience will leave the team members with some amount of information that will be transferred to future STAT experiences. Related results have been found in the mentoring literature, with positive past mentoring experiences being associated with the willingness to mentor in the future (Chun, Litzky, Sosik, Bechtold, & Godshalk, 2010).

In addition, previous research has shown that third parties in organizations serve as conduits of trust by disseminating trust-related information across the organization through gossip (e.g., Burt & Knez, 1996; Kniffen & Wilson, 2010) and through common connections (e.g., Uzzi, 1997). In essence, third parties can serve as a source of imported information by directly communicating social information about the trustworthiness of others (Ferrin, Dirks, & Shah, 2006). Social information processing theory suggests that social cues from others are given more weight when situations are ambiguous or complex (Salancik & Pfeffer, 1978). Research has found, consistent with this theory, that the trust that a leader displays toward a referent individual is more influential on others' trust for that individual when the social context is uncertain (Lau & Liden, 2008). Similarly, we expect that in STATs, the absence of a clear social context will cause third party information regarding trustworthiness to play a strong role in determining individuals' initial levels of trust in the STAT.

How Initial Inputs Influence Trust via Psychological Mediators

The initial informational inputs discussed previously (surface-level cues and imported information) do not directly influence trust attitudes, but instead are

translated through a set of mediating psychological mechanisms, which, in turn, form the initial level of trust toward the team. Specifically, we suggest that trust-related schemas (i.e., cognitive structures that organize related knowledge and concepts about some aspect of the world; Rumelhart, 1980) and emotional reactions (affective states of consciousness in which basic emotions such as joy, sorrow, fear, hate, etc., are experienced; Izard, 2007) are the two primary psychological mechanisms through which the initial informational inputs within STAT contexts influence trust attitude formation. It should be noted that although the literature has often used the terms *affect* and *emotion* interchangeably (a controversial issue outside of the scope of this article), for the sake of clarity, we choose to use the term *emotional reaction* when referring to the variable included in our framework.

Trust-related schemas. One primary mechanism through which surface-level cues and imported information influence trust attitudes toward the STAT is by triggering particular trust-related schemas that are stored in each team member's long-term memory. People develop schemas about all aspects of their life. In this situation, we are interested in schemas regarding the trustworthiness of the team (i.e., category-based beliefs regarding the perceived benevolence, integrity, and ability of the STAT; Williams, 2001).

Members may join a STAT with preexisting knowledge stored in their memory, either gained from a third party or prior personal experiences, as mentioned previously, which may be used to interpret the surface-level cues being perceived and consequently influence trust toward the team. When the team members in a STAT first meet one another, they will interpret the initial surface-level cues that they perceive from the environment and third party information provided by others by comparing this information to similar prior experiences stored in their memory. This comparison process will trigger certain sets of beliefs and assumptions (i.e., schemas) associated with that prior knowledge or experience. For example, imagine that a particular STAT member had an ineffective teamwork experience (e.g., high levels of conflict, low performance) in his or her previous team that was mostly comprised of individuals from the fictional region of LaLaLand. If his or her next team has many people from LaLaLand, as indicated by perhaps the surface-level cues provided by their clothing, he or she may (accurately or inaccurately) carry these negative experiences over and distrust the team immediately because he or she has developed an untrustworthy schema for all individuals from LaLaLand.

> *Proposition 1:* Surface-level cues within the STAT will trigger positive (negative) preconceptions about the team members.

> *Proposition 2:* Positive (negative) preconceptions about the majority of team members will have a positive (negative) impact on individual team members' initial trust toward the team.

In the context of groups, theory has suggested that surface-level cues will not only directly trigger idiosyncratic stereotypes that individuals hold but also lead to social categorization processes (Williams, 2001). Going back to our definition of schema, social categorization is essentially the activation of a schema in which the individual cognitively organizes the team members as part of his or her in-group or part of his or her out-group. Restated, each team member will group him- or herself as either being similar to or different from the rest of the team based on the surface-level cues that are present immediately when a STAT forms. Social identity theory (Tajfel & Turner, 1979; Turner, 1987) then suggests that if individuals perceive the team as similar to themselves, this similarity in demographic traits leads to an assumption about similarity in values, beliefs, and attitudes (Tsui, Porter, & Egan, 2002), and having this assumed knowledge about the team's values leads to a sense of predictability and comfort.

In the context of STATs, trust in the team will rely heavily on the trustor's grouping of him- or herself into the same category as his or her team members (Williams, 2001). Kramer (1999) refers to this type of trust as *category-based trust* or trust that is dependent on information regarding a trustee's (in this case, the team's) membership in a social or organizational category. To the extent that the individual interprets the surface-level cues within the team as indicating that he or she is similar to the majority of the group, he or she will be more likely to attribute positive qualities to the team and, therefore, will trust the team as an entity. If he or she perceives the majority of the team to be an out-group, however, he or she will be less likely to attribute positive qualities to the team and trust the team as a whole. In fact, research has found that perceptions of dissimilarity lessened perspective taking and empathy in team settings (Williams, Parker, & Turner, 2007), which suggests that it will likely have an impact on trust as well.

This categorization process likely depends on the pattern of demographic differences within the team in relation to the team member in question. To illustrate, if a particular team member is the only female in an all-male STAT, she will likely categorize herself as an outsider compared to the rest of the team and, therefore, have lower trust in the team as a whole. Conversely, the male members of the very same STAT would likely immediately perceive themselves as similar to the majority of the team in terms of gender and would consequently associate positive beliefs and feelings (i.e., trust) with

that group (Williams, 2001). In the case that the team is relatively equally split between demographic groups and there is not a clear majority, this categorization process may not be as salient and surface-level cues may simply play a smaller role in determining the team member's level of trust toward the team. In other words, if the surface-level cues within the STAT indicate that a team member is similar to a majority of the other team members, this matching would stimulate perceptions of similarity that would translate into higher levels of trust toward the team, but this relationship would not be as strong if there is not a clear majority within the team on which the team member can base perceptions of similarity.

> *Proposition 3:* Interpreting surface-level cues into perceptions of similarity (dissimilarity) between the team member and the team will have a positive (negative) impact on individual team members' initial trust toward the team.

In another example of how imported information can trigger trust-related schemas when used to interpret surface-level cues, a STAT team member may hear a rumor from a trusted colleague (i.e., a third party), that one or more of his or her new teammates is corrupt. If his or her past experience has taught him or her that corruption is an untrustworthy trait, this information provided by a third party, acting as initial information just like surface-level cues, would then trigger an associated negative trust-related schema when the team member initially meets the described individuals. The friend-of-a-friend phenomenon can also trigger particular trust-related schemas that influence the development of trust toward the team. Uzzi (1997) found in a study of social networks that when establishing new relationships, the trustor can "roll over" his or her expectations from one relationship to the next based on whether or not the first party trusted the new party. In a similar study, Ferrin and colleagues (2006) found that in a workplace setting, an employee's trust for any given coworker was positively related to the number of third parties who were simultaneously trusted by the employee and the focal coworker. Based on these findings, if a STAT team member knows others who know, like, and trust his or her new STAT teammates (i.e., a friend-of-a-friend), he or she will be more inclined to immediately trust those teammates. This effect occurs because the new team members are organized in his or her "friends" schema even if his or her friends have never directly communicated any trustworthiness information to him or her about the referent teammates. Given that we are

interested in trust in the team as a whole, the more teammates that are known and trusted by trusted friends or coworkers, the higher the trust toward the STAT.

> *Proposition 4:* The ratio of STAT members who are known and liked (disliked) by trusted colleagues of the STAT team member will have a positive (negative) impact on individual team members' initial trust toward the team.

Emotional reactions. Jones and George (1998) suggest that the experience of trust evolves from the interactions among people's values, attitudes, moods, and emotions. Following similar logic, our model of trust in STATs suggests that emotional reactions such as joy, comfort, anger, or fear (Tomlinson & Mayer, 2009) are key antecedents leading to the attitudinal state of trust (Lee, Stajkovic, & Cho, 2011). As Fine and Holyfield (1996) so aptly state, "one not only thinks trust, but feels trust" (p. 25). Research has supported the relationship between emotional reactions and trust at the individual level. Dunn and Schweitzer (2005) conducted a series of five studies that demonstrated that when a trustor has little history with a trustee, he or she tends to use heuristic, or rule-of-thumb type, information (e.g., all females are trustworthy, all Americans are untrustworthy) to form a trust judgment, and these rule-of-thumb type judgments are more likely to be influenced by emotional reactions, based on the affect-as-information model (i.e., emotional reactions to situations provide information used in appraisals of the situation; Clore, Gasper, & Garvin, 2001). They found that initial emotional reactions to others, such as anger and gratitude, had the greatest influence on trust in these situations.

Given that newly formed STATs have little to no history, emotional reactions triggered by the situation likely play a strong part in the formation of initial trust. We expect that the specific emotional reactions a trustor has on initially meeting his or her new teammates, which may or may not be consciously associated with the teammates (Dunn & Schweitzer, 2005), will play a critical role in the formation of initial trust levels toward the team. When a STAT member initially observes his or her fellow teammates and perceives various surface-level cues, the trustor may experience emotional reactions to one or several of those cues. For example, he or she may feel scared because of a past negative experience with other individuals that display those same surface-level cues, or he or she may become calm and comforted for the opposite reason. These emotional reactions, especially when they are strong,

then color that team member's trust judgment toward the individual displaying the cues that triggered the emotional reaction (Jones & George, 1998; Williams, 2007). Furthermore, based on the fact that emotional reactions have been demonstrated to have an impact on unrelated judgments, it is likely that a strong emotional reaction to even one cue or one member of the team could have a notable impact on the trustor's level of trust toward the entire team without the trustor having a conscious understanding of that influence. In the event that different team members engender different or opposite emotional reactions, it is likely that the stronger emotional reaction will overrule the weaker one. Thus, we propose,

> *Proposition 5:* Strong positive (negative) emotional reactions to surface-level cues will have a positive (negative) impact on individual team members' initial trust toward the team.

Interplay between schemas and emotions. The propositions we have put forth discuss emotional reactions and trust-related schemas separately for the sake of clarity and parsimony. However, it should be acknowledged that emotional reactions and cognition are often inextricably linked in terms of human experience. Cognitive psychology has demonstrated that the events individuals tend to remember best are ones that are associated with strong emotional reactions (Robinson, 1980). This phenomenon is known as *flashbulb memory*—memories that are extremely vivid and clear because of the emotional context surrounding them. In the context of STATs, flashbulb memories may likely play an even more critical role than in other team contexts because the high stakes nature of STAT-type work is more likely to lead to emotionally charged events (e.g., combat experiences, emergency situations). When individuals experience extremely emotional trust-related events, if that memory is triggered in a future STAT context, not only will it evoke that associated trust-related schema for that event but also it is likely to bring to the surface the emotional reaction associated with that memory. Together, the trust-related schema and the emotional reaction to the memory will play a critical role in determining initial levels of trust for the new STAT. Furthermore, research has suggested that extremely strong emotional reactions can actually take precedence over cognition. Fiske and Neuberg (1990) argue that emotion can be a more powerful determinant of impression formation than cognition and can often override cognitive processes. This fact means that in the event that a strong emotional reaction is elicited by the surface-level cues in the team, this emotional reaction may overshadow the influence of other information.

Proposition 6: Strong emotional reactions will have a greater impact than cognitive appraisals of trustworthiness on individual team members' initial trust toward the team.

Thus far, we have explained how initial informational inputs that are present at the inception of STATs, including individual propensity to trust, surface-level cues, and imported information, combine to influence initial levels of trust toward the team either directly or via emotional reactions and activation of trust-related schemas. It should be emphasized that everything we have discussed to this point has been focused on the development of individual-level trust in the team. In other words, an individual's propensity to trust, along with the emotional reactions and schemas activated in response to perceived surface-level cues and imported information will determine that particular individual's level of initial trust in the STAT as a whole.

Trust and Team Processes

Our framework conceptualizes trust as an emergent psychological state that leads to individuals engaging in trust-related behaviors such as risk-taking and delegation. Trust attitudes are feelings or dispositions held by one person toward another party. Trust behaviors are the behavioral manifestations of that attitude such as information sharing, delegation, risk-taking, and monitoring and, therefore, must be included in the model as a separate but mediating variable between trust and the other outcomes of trust (e.g., team performance, team viability). It is critical to keep the attitude and behavior separate both conceptually and empirically because there are other potential environmental factors that could reduce the relationship between trust attitudes and trust behaviors. Because the framework we put forth is designed to be a cross-level theory in the context of STATs, we conceptualize trust behaviors as being inherent in the enactment of basic team processes.

In a seminal article, Marks and colleagues (2001) defined team processes as the team "member's interdependent acts that convert inputs to outcomes through cognitive, verbal, and behavioral activities directed toward organizing taskwork to achieve collective goals" (p. 357). They further developed a framework of team processes based on the temporal phases of a team (i.e., transition phase and action phase). During transition phases, the team is focused on things such as planning and strategy formulation, and is essentially "paused" in terms of active goal attainment. During action phases, the team is actively pursuing its goals and engaging in task-oriented behaviors. Another set of processes, known as interpersonal processes, are likely to

occur during both action and transition phases. Since STATs are largely characterized by their urgent and action-oriented nature, and they likely have very little time for formal transition phases, this section will focus on the action and interpersonal processes most likely to occur during action phases.

According to Marks and colleagues' (2001) framework, monitoring, coordination, conflict management, motivation building, and affect management are all fundamental processes during the action phase of a team's life cycle. The first process, monitoring, refers to team members observing and tracking the progress of the team (Jentsch, Barnett, Bowers, & Salas, 1999), resources and external conditions (Fleishmann & Zaccaro, 1992), or other members of the team in particular (Salas et al., 2005). The type and amount of trust an individual has toward the team will influence the extent to which that team member engages in monitoring behavior toward other members of the team. Many researchers have acknowledged that trust is generally negatively related to monitoring behavior of other individuals (e.g., Bromiley & Cummings, 1995; Ferrin, Bligh, & Kohles, 2007; Langfred, 2004). In other words, if an individual trusts the team, he or she is less likely to engage in monitoring behavior because his or her confidence in the actions of the team makes monitoring unnecessary. In a team setting, when any individual team member engages in monitoring behavior, the other team members may observe this behavior and follow suit, because it is assumed as a norm of the team. In other words, trust at the individual-level will be negatively related to monitoring at the team level. For example, if there are high levels of trust attitudes toward the team within individual team members, then the team, as a whole, will engage in less progress monitoring.

Conversely, and somewhat counter intuitively, high levels of individual trust toward the team may increase the amount of backup behavior that occurs in the team. Backup behavior is the act of providing feedback and/or resources to enhance performance or provide a teammate with assistance when performing a task (Porter et al., 2003; Sims, Salas, & Burke, 2005). Interpersonal trust has been related to more cooperative behavior toward others (Brewer, 1979; Lee et al., 2011). In a team setting, if the team members feel a high level of trust toward their team, they will be more inclined to cooperate with the team and provide backup behavior for their fellow team members.

Another behavioral team process in the framework offered by Marks and colleagues, coordination, is generally defined as executing the timing and sequence of interdependent actions (Zalesny, Salas, & Prince, 1995). We expect that trust at the individual level is highly influential on team coordination. Low levels of trust, or violations in trust, may lead team members to

engage in social ostracism (Dasgupta, 1988; Hagen & Choe, 1998) to punish and isolate untrustworthy team members, which may negatively affect coordination within the team. Because the social isolation will require the team members to reduce or eliminate interactions with the untrustworthy team members, and often the interdependence of teams requires the involvement of all team members, this reduction of interaction may have a negative impact on the level of coordination in the team even if it is directed at only one team member.

The next process, conflict management, includes techniques used to address and handle disagreements or contentions. Typically, conflict management is subdivided into two primary techniques–preemptive conflict management (i.e., identifying resources to create solutions before conflict arises) and reactive conflict management (i.e., addressing conflict as it occurs; Behfar, Peterson, Mannix, & Trochim, 2008). Certain conflict management strategies and orientations can be more beneficial than others for successful resolution. For example, studies suggest that employing a collaborative conflict management strategy is most useful for mitigating task-based conflicts (Behfar et al., 2008; De Dreu, 2006; Tjosvold, Hui, & Yu, 2003). More importantly, though, is that team members are capable of adapting to situations accordingly and utilizing the most appropriate conflict resolution strategies. Researchers have demonstrated that conflict is negatively associated with trust (Greer, Jehn, Thatcher, & Mannix, 2007; Massey & Dawes, 2007), team performance, and team satisfaction (De Dreu & Weingart, 2003), whereas conflict management has a positive effect on team cohesion, team satisfaction, viability, and perceived performance (Tekleab, Quigley, & Tesluk, 2009). Specifically, team members with higher levels of trust toward the team will be inclined to treat others more fairly, have a collaborative conflict orientation, and use a more cooperative conflict management strategy to resolve any outstanding issues (Behfar et al., 2008). That is, team members with higher levels of trust are more apt to interpret behavior positively and not infer ulterior motives (Han & Harms, 2010) and, as a result, will be able to resolve conflict more efficiently, which, in turn, de-escalates future conflict.

The fourth element that is important during the action phase is motivation building, the process in which team members encourage other team members to continue to engage in the necessary tasks (Fleishman & Zaccaro, 1992). Individual members with high levels of trust have a better understanding of one another; thus, it may be easier to provide more coaching and feedback to members (Kets de Vries, 2005). Research suggests that feedback has a positive impact on encouragement and motivation (Geister, Kondradt, & Hertel, 2006), which can be pivotal to accomplishing the tasks and objectives.

The final applicable team process, affect management (i.e., emotion regulation), is the calibration of the emotions exhibited by the team members, such as perspective taking (i.e., understanding another's point of view; Williams, 2007) and boundary spanning (i.e., interactions and accepting individuals with different norms; Caldwell & O'Reilly, 1982). Team members who have high levels of trust are better equipped to engage in proper affect management, since trust-related behaviors signal benevolence, cooperation, and trustworthiness; and these techniques require similar behaviors (Williams, 2007). Specifically, these behaviors exhibit investment, emotional support, and liking and generate positive feelings indicative of concern and cooperative intent, which signify and influence the development of trust (Jones & George, 1998; Whitener, Brodt, Korsgaard, & Werner, 1998). Given the relationship between trust and the various team processes, we assert the following propositions.

> *Proposition 7:* Individual team members' trust toward the team will be negatively related to action processes enacted in the team, including monitoring and conflict.
> *Proposition 8:* Individual team members' trust toward the team will be positively related to action processes enacted in the team, including backup behavior and coordination.
> *Proposition 9:* Individual team members' trust toward the team will be positively related to interpersonal team processes enacted in the team, including conflict management, motivation building, and affect management.

Team Processes as Deep-Level Trustworthiness Cues

When the team members engage in the above team processes, these behaviors will reveal deep-level cues about the nature of the team, which will be used to adjust levels of trust throughout a team performance episode. Deep-level cues can be defined as the underlying traits and attributes of a trustee—ability, benevolence, integrity—that only become salient to others through interaction and observation of behavior over some period of time (Milliken & Martins, 1996). For example, if the team continually enacts ineffective team processes that are observable by the team members, such as failing to engage in coordination, this failure serves as a cue that the team may not be trustworthy. Due to the human tendency toward self-serving bias (the tendency to attribute successes to oneself and failures to the situation; Campbell & Sedikides, 1999), individual team members are not likely to attribute the team's failure to any of their individual contributions, but instead see the

failure as a reflection of the remainder of the team. Conversely, one's team members may frequently engage in backup behavior and help their fellow teammates during task execution. This behavior would serve as an indicator of the team's benevolence and, therefore, increase the trust the team member holds in the team. In other words, as the STAT members engage in team processes, hidden deep-level cues are revealed in observable behavior, and these cues influence the team members' emotional and cognitive reactions (i.e., emotional reactions and trust-related schemas). Team processes will be particularly important indicators of deep-level cues, given that STATs will have little time to engage in any nontask related interactions during their performance episode.

> *Proposition 10:* Observable monitoring and conflict behaviors occurring within the team will serve as deep-level cues and will trigger negative emotions and trust-related schemas in team members, consequently reducing individual team members' trust toward the team.
> *Proposition 11:* Observable backup and coordination behaviors in the team will serve as deep-level cues and trigger positive emotions and trust-related schemas in team members, consequently increasing individual team members' trust toward the team.

Team Performance as a Trust Input

The final stage of our theoretical framework is the outcome-input phase of trust development, which Ilgen and colleagues (2005) refer to as the "finishing stage" (p. 521). In this phase, the final outcome of the team's work (team performance) becomes an input into the trust development process, and trust-related learning can occur both within the performance cycle of a given STAT and across different STAT experiences. In essence, team performance serves as a source of feedback that continuously influences the level of trust in the team over time.

Trust has been said to "lubricate" the teamwork processes and consequently leads to higher team performance. Corbitt, Gardiner, and Wright (2004) found that trust is essential for improved team performance for both colocated and distributed teams. Costa (2003) surveyed 112 teams, with results of the survey suggesting that trust was not only positively related to team satisfaction and attitudinal commitment but also positively correlated with perceived task performance. For these reasons, we are expecting that trust at the team level, through its influence on team processes, will have a positive impact on team performance.

The level of team performance will then serve as a distal input back into the trust development cycle. If the team performs well and achieves its goals, the team members will store this experience in their memory as an example of a trustworthy and successful STAT. Then, in the future, they will compare new STATs to this memory as a heuristic to quickly determine if the new STAT is likely to be trustworthy. Similarly, if the team performs poorly—failing to achieve its mission or producing subpar results—the team members will store the experience as an example of an untrustworthy STAT. These past experiences with successful and unsuccessful STATs serve as the basis for the imported information carried into future STAT contexts.

After the team has concluded its performance cycle, there is often a period of reflection that takes place. Reflection on an event or experience as well as the ensuing analysis is the foundation for experiential learning (Fanning & Gaba, 2007). Reflection activities could include posttask rumination on performance (e.g., debriefing) when task feedback can be provided to individuals and/or groups via after-action review technologies. It is from these reflective activities that learning about trust occurs (e.g., who should be trusted? Why should others be distrusted?). As we have discussed, individuals come into teams carrying previous experiences and react based on these previous experiences. During after-action reviews individuals may discuss and create trust generalizations based on the performance of a STAT and these generalizations may carry over as previous experience for the next STAT encounter. It is important to note here that STATs may or may not stay together for multiple cycles of performance and this feedback (i.e., transfer of trust) may be used across different teams.

> *Proposition 12:* The overall performance of a STAT will serve as imported information for the individual team members when developing initial trust in future STATs such that memories of positive (negative) performance will be associated with positive (negative) trust-related schemas.

The Role of STAT Context

We have described the basic IMOI framework of trust development in STATs. However, we have yet to discuss how the key contextual variables that make STATs so unique will affect this trust development process. The contextual variables at play can be generally divided into two categories: contextual variables that are endogenous (i.e., derived internally) to the team, such as leadership, and contextual variables that are exogenous (i.e., derived

externally) to the team, such as task uncertainty. Our framework has been derived at a more general level to illustrate its relevance across differing contexts. In this section, we discuss how contextual factors that are likely to occur in STATs may differentially interact with components of the model.

Team leadership. One contextual factor that can play a role in STATs is the leadership of such teams. Although there is plethora of research examining the impact that leaders can have on organizational effectiveness, leadership research is increasingly focusing on the impact that team leaders can have on team effectiveness. In this vein, many have argued that team leadership plays a critical role in determining team effectiveness (Hackman, 2002; Zaccaro, Rittman, & Marks, 2001). The importance of leadership is especially true in STATs, where the fast-paced development and performance of the team may be best facilitated through effective team leadership behaviors, specifically in terms of setting the tone for trust development.

Team leadership, as defined here, refers to social problem solving and an influence process in which the leader's role is "to do or get done, whatever is not being adequately handled for group needs" (McGrath, 1962, p. 5). Team leadership is specifically critical to STATs in that leadership behaviors can influence team member perceptions (Zaccaro et al., 2001). This influence means that leadership plays an important role in the establishment of trust in particular. Indeed, previous research has illustrated that followers look to the leader to determine whom to trust and how much to trust them in team settings (Lau & Liden, 2008). In their study of leadership and trust, Lau and Liden found that coworkers tended to place more trust in fellow coworkers who were also trusted by team leaders. Furthermore, leader's trust had more influence when the social context was uncertain. Given that STAT contexts may lead to more uncertainty due to the dynamic nature of the team, it may be true that in these environments, team leadership will serve as a key moderating factor in terms of influencing subordinates' trust in the team. The leader can help the team members to reflect on both their positive and negative trust-related experiences, rather than just focusing on one or the other to avoid developing skewed and inaccurate trust-related schemas. Thus, we propose,

> *Proposition 13:* STATs that are trusted by team leaders will be viewed as more trustworthy than STATs that are not trusted by team leaders.

When considering that team leadership has an impact on STAT trust, it is critical to understand why leadership may have an effect. At its heart, leadership is about influence; therefore, the leader plays a critical role in establishing

the behavioral norms and climate of the team. For example, Edmondson (1999) argues that to the extent that the leader interacts with the team in a supportive manner where coaching assistance is offered and questions/ challenges are answered in a nondefensive manner, the leader models behavior that is indicative of a positive social climate within the team. In this sense, leaders can model the behavior that they wish to see within their team; in essence, they set the conditions for acceptable behavior within the team. By setting a positive social climate, leaders allow the team to conclude that the team constitutes a psychologically safe environment in which ideas are freely exchanged and members are looking out for what is good for the team as a whole. A psychologically safe environment refers to one in which there is "a shared belief that the team is safe for interpersonal risk taking" (Edmondson, 1999, p. 354). Such an environment should lend itself to team members more readily trusting one another and, therefore, strengthen team trust more rapidly than in a psychologically unsafe environment. Thus this logic leads to the following proposition:

> *Proposition 14:* Team leaders who promote a psychologically safe social climate will increase the rate at which individual team members' trust develops within STATs.

Task uncertainty. As a focus for our theorizing, we consider tasks varying in structure (well- or ill-defined; Campbell, 1991) and how these differences in structure interact with team process during collaboration. Task structure can be characterized along multiple dimensions (e.g., task routineness; Rousseau & Aubé, 2010) and, for illustrative purposes, we follow Campbell's model (1988, 1991). Campbell's model emphasizes the degree of ambiguity in the task environment, characterized as the relation between multiple potential task paths one can consider and the uncertainty often associated with each possible path. The construct of multiple paths is meant to capture the degree to which one can pursue different options to achieve some goal. Uncertainty, in this context, addresses the degree to which outcomes vary in their likelihood of occurring based on a particular path being followed, that is, the amount of ambiguity associated with a "potential" outcome. For example, a team may need to coordinate to deliver some set of resources to a particular target location. Multiple routes to reach that target may exist. Furthermore, these routes might have differing probabilities for successful navigation (e.g., too much rain might present a challenge with a river crossing; enemy activity might make one more dangerous than another). Multiple paths and outcome ambiguity can add a level of abstraction to an already challenging

context because team members must choose among various options and the outcomes associated with the different options vary in the probability that what is expected will occur. The abstract nature of this experience, in turn, can increase the cognitive workload on team members because they need to consider, simultaneously, options and probabilities on top of trying to accomplish a task. As such, increases in task uncertainty may deplete cognitive resources team members usually devote to understanding the trustworthiness of their teammates (e.g., looking beyond surface-level cues). We, therefore, predict that STATS faced with high levels of task uncertainty may become overly dependent on heuristic-based decision making and rely more heavily on predispositions than would teams in less uncertain situations. Because uncertainty may have a different impact at different stages of a task, workload will similarly be affected. As such, we present the following proposition.

> *Proposition 15:* Task uncertainty will moderate the relationship between propensity to trust and individual team members' trust in the team such that in tasks with greater uncertainty, propensity to trust will be a stronger predictor of individual team members' trust in the team.

Implications of the Framework

We have proposed a framework of trust development in swift starting action teams, organized around the IMOI model drawn from the team literature (Ilgen et al., 2005). This framework makes several unique and valuable contributions to the trust and team literature. First, it integrates the key components from a variety of existing trust and team theories to create the first trust development theory to focus specifically on trust in swift starting action teams. This context-specific approach is critical for theory building, as context-specific theories are necessary to move context-generic theories toward a more applicable and useful form. Second, it is one of the first theories of trust development in teams to take a decidedly dynamic approach. By organizing our theory around the IMOI framework, we explicitly include the concept of time in the trust development process. In addition, our framework calls attention to the seldom studied phenomenon of trust "rollover" in a way that has not been discussed before. We also acknowledge in our framework that STATs do not operate in a vacuum, and there are defining contextual features that can change the way trust is developed within the team.

In terms of practical implications, leadership is one primary area where this framework can be used to improve the development of trust in STATs. First,

leaders can help to improve the trust development process based on our model by making team members more aware of the sources of their emotional reactions. STAT leaders can guide team members in identifying the true sources of their emotions and, therefore, mitigate the consequences of emotions for trust development. Second, leaders can also help to facilitate more active trust-related learning after the team performance cycle has ended. Using guided debrief approaches, the leader can help the team members to more consciously reflect on their experiences and to carry only accurate and useful information into the next STAT context as imported information.

Our framework does lend itself to the development of trust-focused team training. Specifically, given that so much of trust in STATs is based on the team members' affective reactions, trust-related schemas, and interpreted perceptions of their surroundings, metacognitive skills training (Schraw, 1998) could be extremely useful for more accurately calibrating trust in the team. Simply stated, if team members are trained to be more aware of their emotions, the sources of those emotions, and their cognitive preconceptions and stereotypes, they can also be trained to more effectively control these emotions and cognitions. Metacognitive training could also be used to increase the team members' ability to pick up on relevant trust-related deep-level cues (i.e., acts of ability, benevolence, and integrity) during the team performance cycle to continuously recalibrate trust over time.

We have presented a theoretical framework of trust development in STATs that will serve as an initial starting point for future empirical exploration. Although all of the propositions require empirical research to support them, several require more immediate attention than others. First, it is important that future research fully explores the impact of emotional reactions on trust in STATs. As previously discussed, although emotions have been shown to play a large role in trust decisions (e.g., Dunn & Schweitzer, 2005), it has not been empirically tested if these specific emotional reactions will, as we expect, also influence an individual's trust in an entire team as compared to an individual. Future studies that manipulate team members' emotions and elicit a range of affective responses would be beneficial to aid in clarifying the specific role of emotions in influencing trust attitudes and intentions toward the team.

At present, the transfer of trust beliefs from previous team experiences has not been investigated fully in research and represents an area ripe for exploration. Although it is highly likely that experiences in one team may lead a person to carry over ideas and beliefs to future similar situations, it is unknown to what degree this occurs in STATs. In addition, research is needed to explore the impact of reflection on trust transfer in STATs, particularly in terms of determining the value of guided reflection such as the use of

after-action reviews (AARs) that allow team members to reflect and learn from their experiences (Smith-Jentsch, Cannon-Bowers, Tannenbaum, & Salas, 2008). Such guided reflection may actually aid in reducing negative trust transfer, as it can provide insight on team processes and performance that reduces assumptions and conclusions drawn from biases or prejudices. For example, providing guided reflection may prevent a team that performed poorly from blaming it on the team member who was of a different race or gender by pointing out the failures of the team as a whole. This guided reflection could then reduce the reliance on biases in future STATs.

It should be noted that the very nature of STATs makes it more difficult to do the research just prescribed. The teams have very little spare time, so using any research methods that consume much of the team members' time (e.g., questionnaires, interviews) would be difficult to execute. Furthermore, many STATs function in highly dangerous settings (e.g., combat zones, disaster areas), making it risky or nearly impossible for researchers to study them in vivo. Yet there are several ways that researchers can still examine the basic nature of these teams. For STATs that are functioning in relatively lower risk settings, observational methods of measurement (e.g., behavioral observation scales, behavioral anchored rating scales; Wildman, Bedwell, Salas, & Smith-Jentsch, 2010) can be useful for capturing information about the team in its natural environment without taking up the team members' time. Trained observers can watch the team in action and code for specific behavioral manifestations of trust. Recordings of audio communications can also be used to code for trust behaviors and team processes in much the same way (e.g., Salas, Burke, Fowlkes, & Priest, 2003). These less invasive research methods provide researchers with the opportunity to examine changes in trust over time from a behavioral standpoint while reducing the extent to which their presence interferes with the team's work.

The limitation of these less invasive approaches is that observation cannot be used to gauge the team members' levels of attitudinal trust, as the only way to directly capture attitudes is through self-report techniques. Here we offer a more technological potential solution: if the team members carry electronic communication devices (e.g., smartphones) for use in their task, extremely brief self-report measures of trust could be captured via those devices at various points during the performance cycle. Of course, this approach will only be successful if the team can still function effectively with a small amount of distraction. This type of mobile device-based measurement could also be ideal for capturing momentary emotional reactions and trust-related schemas at various points in time to facilitate research aimed at testing the propositions set forth in our framework.

For STATs that are functioning in higher risk settings, simulation is a useful tool for studying the functioning of the team without placing researchers in imminent danger. Simulation, which can be defined as any artificial or synthetic environment created to manage one's experience with reality (Bell, Kanar, & Kozlowski, 2008), can be used to place the team in a lower risk controlled environment for study. Thus the researcher can deliberately manipulate the aspects of the team's environment that we have suggested may have an impact on trust development (e.g., leadership, task uncertainty) and then directly assess the influence of these variables on trust and its outcomes. Although research done in simulated settings is not as natural, nor generalizable, as research done in the field, it will still provide a basic understanding of how trust is created and sustained in STATs. Furthermore, the element of control that simulation provides may help researchers to isolate the influences on trust in these settings. Simulation is also extremely useful for studying infrequently occurring (i.e., low base rate) but critical situations that STATs are likely to face. For example, it may be that a certain STAT usually functions in settings with moderate levels of task uncertainty, and therefore, it is difficult to study the influence of high or low task uncertainty on trust in the team's natural setting.

Conclusion

As the nature of work has become increasingly complex and fast-paced, STATS are increasing in prevalence. These teams do not have the luxury of time to develop and adjust to the demands of teamwork prior to performing. Therefore, it is important to understand how the affective, cognitive, and behavioral processes involved in trust development may differ for STATs so that these teams can be managed and trained to achieve the levels of trust necessary for effective team performance. Although the literature on trust is evergrowing, our framework provides a unique contribution in that it targets a context in need of much attention and aids in clarifying the intricacies involved in team trust development, particularly in complex and demanding environments. We hope that the framework presented here provides useful guidance regarding trust development in swift starting action teams and stimulates future research.

Authors' Note

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References

Algesheimer, R., Dholakia, U. M., & Gurău, C. (2011). Virtual team performance in a highly competitive environment. *Group & Organization Management, 36*, 161-190.

Behfar, K. J., Peterson, R. S., Mannix, E. A., & Trochim, M. K. (2008). The critical role of conflict resolution in teams: A close look at the links between conflict type, conflict management strategies, and team outcomes. *Journal of Applied Psychology, 93*, 170-188.

Bell, B. S., Kanar, A. M., & Kozlowski, S. W. J. (2008). Current issues and future directions in simulation-based training in North America. *International Journal of Human Resource Management, 19*, 1416-1434.

Bell, S. T., Villado, A. J., Lukasik, M. A., Belau, L., & Briggs, A. L. (2011). Getting specific about demographic diversity variable and team performance relationships: A meta-analysis. *Journal of Management, 37*, 709-743.

Brewer, M. B. (1979). In-group bias in the minimal intergroup situation: A cognitive-motivational analysis. *Psychological Bulletin, 86*, 307-324.

Bromiley, P., & Cummings, L. L. (1995). Transactions costs in organizations with trust. In R. J. Bies, R. J. Lewicki, & B. H. Sheppard (Eds.), *Research on negotiations in organizations* (Vol. 5, pp. 219-247). Greenwich, CT: JAI.

Burke, C. S., Sims, D. E., Lazzara, E. H., & Salas, E. (2007). Trust in leadership: A multi-level review and integration. *Leadership Quarterly, 18*, 606-632.

Burt, R. S., & Knez, M. (1996). Trust and third-party gossip. In R. M. Kramer & T. R. Tyler (Eds.), *Trust in organizations: Frontiers of theory and research* (pp. 68-89). Thousand Oaks, CA: SAGE.

Caldwell, D. F., & O'Reilly, C., III. (1982). Boundary spanning and individual performance: The impact of self-monitoring. *Journal of Applied Psychology, 67*, 124-127.

Campbell, D. J. (1988). Task complexity: A review and analysis. *Academy of Management Review, 13*, 40-52.

Campbell, D. K. (1991). Goal levels, complex tasks, and strategy development: A review and analysis. *Human Performance, 4*, 1-31.

Campbell, W. K., & Sedikides, C. (1999). Self-threat magnifies the self-serving bias: A meta-analytic integration. *Review of General Psychology, 3*, 23-43.

Chun, J. U., Litzky, B. E., Sosik, J. J., Bechtold, D. C., & Godshalk, V. M. (2010). Emotional intelligence and trust in formal mentoring programs. *Group & Organization Management, 45*, 421-455.

Clore, G. L., Gasper, K., & Garvin, E. (2001). Affect as information. In J. P. Forgas (Ed.), *Handbook of affect and social cognition* (pp. 121-144). Mahwah, NJ: Lawrence Erlbaum.

Cohen, S. G. (1993). New approaches to teamwork. In J. R. Galbraith & E. E. Lawler (Eds.), *Organizing for the future: The new logic for managing complex organizations* (pp. 194-226). San Francisco, CA: Jossey-Bass.

Colquitt, J. A., Scott, B. A., & LePine, J. A. (2007). Trust, trustworthiness, and trust propensity: A meta-analytic test of their unique relationships with risk taking and job performance. *Journal of Applied Psychology, 92*, 909-927.

Corbitt, G., Gardiner, L. R., & Wright, L. K. (2004, January). *A comparison of team developmental stages, trust, and performance for virtual versus face-to-face teams* (pp. 1-8). Paper presented at the 37th Hawaii International Conference on System Sciences, Kona, Hawaii.

Costa, A. C. (2003). Work team trust and effectiveness. *Personnel Review, 32*, 605-622.

Curşeu, P. L., & Schruijer, S. G. L. (2010). Does conflict shatter trust or does trust obliterate conflict? Revisiting the relationships between team diversity, conflict, and trust. *Group Dynamics: Theory, Research, and Practice, 14*, 66-79.

Dasgupta, P. (1988). Trust as a commodity. In D. Gambetta (Ed.) *Trust: Making and breaking cooperative relations* (pp. 49-72). Oxford, UK: Blackwell.

De Dreu, C. K. W. (2006). When too little or too much hurts: Evidence for a curvilinear relationship between task conflict and innovation in teams. *Journal of Management, 32*, 83-107.

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*, 741-749.

De Jong, B. A., & Elfring, T. (2010). How does trust affect the performance of ongoing teams? The mediating role of reflexivity, monitoring, and effort. *Academy of Management Journal, 53*, 535-549.

Dunn, J. R., & Schweitzer, M. E. (2005). Feeling and believing: The influence of emotion on trust. *Journal of Personality and Social Psychology, 88*, 736-748.

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

Fanning, R. M., & Gaba, D. M. (2007). The role of debriefing in simulation-based learning. *Simulation in Healthcare, 2*, 115-125.

Ferrin, D. L., Bligh, M. C., & Kohles, J. C. (2007). Can I trust you to trust me? A theory of trust, monitoring, and cooperation in interpersonal and intergroup relationships. *Group & Organization Management, 32*, 465-499.

Ferrin, D. L., Dirks, K. T., & Shah, P. P. (2006). Direct and indirect effects of third-party relationships on interpersonal trust. *Journal of Applied Psychology, 91*, 870-883.

Fine, G. A., & Holyfield, L. (1996). Secrecy, trust and dangerous leisure: Generating group cohesion in voluntary organizations. *Social Psychology Quarterly, 59*, 22-38.

Fiske, S. T. (1993). Social cognition and social perception. *Annual Review of Psychology, 44*, 155-194.

Fiske, S. T., & Neuberg, S. L. (1990). A continuum of impression formation, from category-based to individuating processes: Influences of information and motivation on attention and interpretation. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 23, pp. 1-74). San Diego, CA: Academic Press.

Fleishman, E. A., & Zaccaro, S. J. (1992). Toward a taxonomy of team performance functions. In R. W. Swezey & E. Salas (Eds.), *Teams: Their training and performance* (pp. 31-56). Norwood, NJ: Ablex.

Geister, S., Konradt, U., & Hertel, G. (2006). Effects of process feedback on motivation, satisfaction, and performance in virtual teams. *Small Group Research, 37*, 459-489.

Greer, L., Jehn, K., Thatcher, S., & Mannix, E. (2007, June). *The effect of trust on conflict and performance in groups split by demographic faultlines*. Paper presented at the meeting of the International Association for Conflict Management, Budapest, Hungary.

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.

Hackman, J. R. (1990). Groups that work (and those that don't): Creating conditions for effective teamwork. San Francisco, CA: Jossey-Bass.

Hackman, J. R. (2002). *Leading teams: Setting the stage for great performances*. Boston, MA: Harvard Business Press.

Hagen, J. M., & Choe, S. (1998). Trust in Japanese interfirm relations: Institutional sanctions matter. *Academy of Management Review, 23*, 589-600.

Han, G., & Harms, P. D. (2010). Team identification, trust, and conflict: A mediation model. *International Journal of Conflict Management, 21*, 20-43.

Harrison, D. A., Price, K. H., Gavin, J. H., & Florey, A. T. (2002). Time, teams, and task performance: Changing effects of surface- and deep-level diversity on group functioning. *Academy of Management Journal, 45*, 1029-1045.

Horwitz, S. K., & Horwitz, I. B. (2007). The effects of team diversity on team outcomes: A meta-analytic review of team demography. *Journal of Management, 33*, 987-1015.

Ilgen, D. R., Hollenbeck, J. R., Johnson, M., & Jundt, D. (2005). Teams in organizations: From input-process-output models to IMOI models. *Annual Review of Psychology, 56*, 517-543.

Izard, C. E. (2007). Basic emotions, natural kinds, emotion schemas, and a new paradigm. *Perspectives on Psychological Science, 2*, 260-280.

Jentsch, F., Barnett, J., Bowers, C. A., & Salas, E. (1999). Who is flying this plane anyway? What mishaps tell us about crew member role assignment and air crew situational awareness. *Human Factors, 41*, 1-14.

Jones, G., & George, J. (1998). The experience and evolution of trust: Implications for cooperation and teamwork. *Academy of Management Review, 23*, 531-546.

Joshi, A., & Roh, H. (2009). The role of context in work team diversity research: A meta-analytic review. *Academy of Management Journal, 52*, 599-627.

Kets de Vries, M. F. R. (2005). Leadership group coaching in action: The Zen of creating high performance teams. *Academy of Management Executive, 19*, 61-76.

Kniffen, K. M., & Wilson, D. S. (2010). Evolutionary perspectives on workplace gossip: Why and how gossip can serve groups. *Group & Organization Management, 35*, 150-176.

Kozlowski, S. W. J., & Klein, K. J. (2000). A multilevel approach to theory and research in organizations: Contextual, temporal, and emergent processes. In K. J. Klein & S. W. J. Kozlowski (Eds.), *Multilevel theory, research, and methods in organizations* (pp. 3-90). San Francisco, CA: Jossey-Bass.

Kramer, R. M. (1999). Trust and distrust in organizations: Emerging perspectives, enduring questions. *Annual Review of Psychology, 50*, 569-598.

Langfred, C. W. (2004). Too much of a good thing? Negative effects of high trust and individual autonomy in self-managing teams. *Academy of Management Journal, 47*, 385-399.

Lau, D. C., & Liden, R. C. (2008). Antecedents of coworker trust: Leaders' blessings. *Journal of Applied Psychology, 93*, 1130-1138.

Lee, A. Y., Bond, G. D., Russell, D. C., Tost, J., González, C., & Scarbrough, P. S. (2010). Team perceived trustworthiness in a complex military peacekeeping simulation. *Military Psychology, 22*, 237-261.

Lee, D., Stajkovic, A. D., & Cho, B. (2011). Interpersonal trust and emotion as antecedents of cooperation: Evidence from Korea. *Journal of Applied Social Psychology, 41*, 1603-1631.

Lewicki, R. J., & Bunker, B. B. (1995). Trust in relationships: A model of development and decline. In B. B. Bunker, J. Z. Rubin, & Associates (Eds.), *Conflict, cooperation, and justice: Essays inspired by the work of Morton Deutsch* (pp. 133-173). San Francisco, CA: Jossey-Bass.

Marks, M. A., Mathieu, J. E., & Zaccaro, S. J. (2001). A temporally based framework and taxonomy of team processes. *Academy of Management Review, 26*, 356-376.

Massey, G. R., & Dawes, P. L. (2007). Personal characteristics, trust, conflict, and effectiveness in marketing/sales working relationships. *European Journal of Marketing, 41*, 1117-1145.

Mayer, R. C., Davis, J. H., & Schoorman, F. D. (1995). An integrative model of organizational trust. *Academy of Management Review, 20*, 709-734.

McAllister, D. J. (1995). Affect- and cognition-based trust as foundations for interpersonal cooperation in organizations. *Academy of Management Journal, 38*, 24-59.

McCulloch, K. C., Ferguson, M. J., Kawada, C. C. K., & Bargh, J. A. (2008). Taking a closer look: On the operation of nonconscious impression formation. *Journal of Experimental Social Psychology, 44*, 614-623.

McGrath, J. E. (1962). *Leadership behavior: Some requirements for leadership training*. Washington, DC: U.S. Civil Service Commission.

McGrath, J. E. (1984). *Groups: Interaction and performance*. Englewood Cliffs, NJ: Prentice Hall.

McGrath, J. E., Arrow, H., & Berdahl, J. L. (2000). The study of groups: Past, present, and future. *Personality and Social Psychology Review, 4*, 95-105.

McKinney, E. H., Jr., Barker, J. R., Davis, K. J., & Smith, D. R. (2005). How swift starting action teams get off the ground. *Management Communication Quarterly, 19*, 198-237.

McKinney, E. H., Jr., Barker, J. R., Smith, D. R., & Davis, K. J. (2004). The role of communication values in swift starting action teams: IT insights from flight crew experience. *Information & Management, 41*, 1043-1056.

Meyerson, D., Weick, K., & Kramer, R. (1996). Swift trust and temporary groups. *Trust in organizations: Frontiers of theory and research* (pp. 166-195). Thousand Oaks, CA: SAGE.

Milliken, F., & Martins, L. (1996). Searching for common threads: Understanding the multiple effects of diversity in organizational groups. *Academy of Management Review, 21*, 402-433.

National Transportation Safety Board. (1994). *A review of flight crew involved in major accidents of US air carriers 1978-1990 safety study*. NTSB/SS-94-01, Washington, DC: Author.

Peters, L., & Karren, R. J. (2009). An examination of the roles of trust and functional diversity on virtual team performance ratings. *Group & Organization Management, 34*, 479-504.

Porter, C. O. L. H., Hollenbeck, J. R., Ilgen, D. R., Ellis, A. P. J., West, B. J., & Moon, H. (2003). Backing up behaviors in teams: The role of personality and legitimacy of need. *Journal of Applied Psychology, 88*, 391-403.

Robinson, J. A. (1980) Affect and retrieval of personal memories. *Motivation and Emotion, 4*, 149-174.

Rousseau, V., & Aubé, C. (2010). Team self-managing behaviors and team effectiveness: The moderating effect of task routineness. *Group & Organization Management, 35*, 751-781.

Rumelhart, D. E. (1980). Schemata: The building blocks of cognition. In R. J. Spiro, B. Bruce, & W. F. Brewer (Eds.), *Theoretical issues in reading and comprehension* (pp. 33-58). Hillsdale, NJ: Lawrence Erlbaum.

Salancik, G. R., & Pfeffer, J. (1978). A social information processing approach to job attitudes and task design. *Administrative Science Quarterly, 23*, 224-253.

Salas, E., Burke, C. S., Fowlkes, J. E., & Priest, H. A. (2003). On measuring teamwork skills. In J. C. Thomas (Ed.), *Comprehensive handbook of psychological assessment, volume 4: Organizational assessment* (pp. 1105-1149). New York, NY: John Wiley.

Salas, E. Sims, D. E., & Burke, C. S. (2005). Is there a "Big Five" in teamwork? *Small Group Research, 36*, 555-599.

Schaubroeck, J., Lam, S. K., & Peng, A. (2011). Cognition-based and affect-based trust as mediators of leader behavior influences on team performance. *Journal of Applied Psychology, 96*, 863-871.

Schraw, G. (1998). Promoting general metacognitive awareness. *Instructional Science, 26*, 113-125.

Sims, D. E., Salas, E., & Burke, C. S. (2005). Promoting effective team performance through training. In S. A. Wheelan (Ed.), *The handbook of group research and practice: Methods and outcomes* (pp. 407-425). Thousand Oaks, CA: SAGE.

Smith-Jentsch, K. A., Cannon-Bowers, J. A., Tannenbaum, S. I., & Salas, E. (2008). Guided team self-correction: Impacts on team mental models, processes, and effectiveness. *Small Group Research, 39*, 303-327.

Stahl, G. K., Maznevski, M. L., Voigt, A., & Jonsen, K. (2010). Unraveling the effects of cultural diversity in teams: A meta-analysis of research on multicultural work groups. *Journal of International Business Studies, 41*, 690-709.

Tajfel, H., & Turner, J. C. (1979). An integrative theory of intergroup relations. In W. G. Austin & S. Worchel (Eds.), *Psychology of intergroup relations* (pp. 33-48). Monterey, CA: Brooks-Cole.

Tekleab, A. G., Quigley, N. R., & Tesluk, P. E. (2009). A longitudinal study of team conflict, conflict management, cohesion, and team effectiveness. *Group & Organization Management, 34*, 170-205.

Tjosvold, D., Hui, C., & Yu, Z. (2003). Conflict management and task reflexivity for team in-role and extra-role performance in China. *International Journal of Conflict Management, 14*, 141-163.

Tomlinson, E. C., & Mayer, R. C. (2009). The role of causal attribution dimensions in trust repair. *Academy of Management Review, 34*, 95-104.

Tsui, A., Porter, L., & Egan, T. (2002). When both similarities and dissimilarities matter: Extending the concept of relational demography. *Human Relations, 55*, 899-929.

Turner, J. C. 1987. *Rediscovering the social group: A self-categorization theory*. Oxford, UK: Blackwell.

Uzzi, B. (1997). Social structure and competition in interfirm networks: The paradox of embeddedness. *Administrative Science Quarterly, 42*, 35-67.

Webber, S. S., & Donahue, L. M. (2001). Impact of highly and less job-related diversity on work group cohesion and performance: A meta-analysis. *Journal of Management, 27*, 141-162.

Whitener, E. M., Brodt, S. E., Korsgaard, M. A., & Werner, J. M. (1998). Managers as initiators of trust: An exchange relationship framework for understanding managerial trustworthy behavior. *Academy of Management Review, 23*, 513-530.

Wildman, J. L., Bedwell, W. L., Salas, E., & Smith-Jentsch, K. A. (2010). Performance measurement at work: A multilevel perspective. In S. Zedeck (Ed.), *Handbook of industrial and organizational psychology: Vol. 1. Building and developing the organization* (pp. 303-342). Washington, DC: American Psychological Association.

Williams, M. (2001). In whom we trust: Group membership as an affective context for trust development. *Academy of Management Review, 26*, 377-396.

Williams, M. (2007). Building genuine trust through interpersonal emotion management: A threat regulation model of trust and collaboration across boundaries. *Academy of Management Review, 32*, 595-621.

Williams, H. M., Parker, S. K., & Turner, N. (2007). Perceived dissimilarity and perspective taking within work teams. *Group & Organization Management, 32*, 569-597.

Zaccaro, S. J., Rittman, A. L., & Marks, M. A. (2001). Team leadership. *Leadership Quarterly, 12*, 451-483.

Zalesny, M. D., Salas, E., & Prince, C. (1995). Conceptual and measurement issues in coordination: Implications for team behavior and performance. *Research in Personnel and Human Resources Management, 13*, 81-115.

Ziegert, J., Klein, K., & Xiao, Y. (2001). Team leadership: A review and extension of existing theory through a qualitative study of shock trauma teams. In J. L. Pearce & R. L. Tung (Eds.), *Proceedings of the Academy of Management Meeting* (pp. 135-140). New York, NY: Academy of Management.

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