TRUST DEVELOPMENT AND PERFORMANCE IN SELF-MANAGED TEAMS

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ABSTRACT

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Research on teams has overwhelmingly presented trust (based on perceptions of the team's ability, integrity, and benevolence) as a positive and required antecedent of team effectiveness, proposing that trust linkages make it possible for team members to better communicate and coordinate their efforts. This positive conceptualization of trust holds even for groups that have just formed and begun working together, as such groups develop trust in one another (based mainly on institutional, dispositional, and cognitive proxies for ability, integrity, and benevolence) rapidly in order to complete their goals together, referred to in the literature as swift trust. This dissertation proposes that high levels of trust early in team tenure can cause teams to lag behind in performance when compared to teams who build trust more slowly. In addition, this dissertation examines the reciprocal relationship between trust and performance over time, as performance episodes provide information on ability, integrity, and benevolence to the team.

By observing and surveying a set of 96 teams working on a multiple-step project over the course of 15 weeks, I was able to determine that demographic similarity and trust propensity predict trust early in team tenure, and that teams with high levels of this early trust produced lower overall performance than did teams who built trust more slowly. I also found that the variance in contribution toward performance within the team negatively predicts subsequent trust in the team, and that trust predicts subsequent effectiveness of team processes. On the other hand, team performance does not predict subsequent trust in the team, indicating that team

members may not use performance information as an indicator of the ability, integrity, and benevolence of their team. While high trust early in team tenure was detrimental to performance, trust late in team tenure allowed teams to better translate their past performance into high subsequent performance. I discuss the theoretical and practical implications of these findings and propose future research directions in the study of a more complex relationship between trust and performance in teams over time.

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INTRODUCTION

Teams have been a fixture in work organizations for many years, and their use continues to grow to this day. In order for team members to interact over time and produce team outcomes, they must first trust one another. Trust, generally defined as a willingness to make oneself vulnerable to the actions of another, has long been studied in the context of an individual within an organization (Mayer, Davis, & Schoorman, 1995). In a team context, trust is often cited as essential to team effectiveness, serving as a basis for interaction between team members (Bhattacharya, Devinney, & Pillutla, 1998; Golembiewski & McConkie, 1975). Lipnack and Stamps (2000, pp. 69-70) point out that "Teams with trust converge more easily, organize their work more quickly, and manage themselves better."

One particularly interesting facet of trust in teams is the concept of *swift trust*. Teams which are generally temporary in nature (with members performing tasks together in order to complete a distinct set of goals, and then likely moving on to another team) tend to form trust links very quickly (Meyerson, Weick, & Kramer, 1996). Because members of these teams know relatively little about one another, their trust is based more on institutional factors (role expectations, consequences for failure), attitudinal factors (stereotyping, ingroup membership), and personality factors (agreeableness) than on traditional trustworthiness (ability, integrity, and benevolence). Despite their lack of salient information on trustworthiness, these groups often form trust bonds very quickly in order to work together and complete their tasks (Meyerson, et al., 1996). Building on this foundation, McKnight, Cummings, and Chervany (1998) built a theoretical framework of trust development early in team tenure, which has been used extensively in the literature to explain high trust levels in newly-formed teams. Following on from this theoretical paper, empirical studies have shown that teams do form relatively high trust

linkages early in their tenure (Jarvenpaa, Knoll, & Leidner, 1998; Jarvenpaa, Shaw, & Staples, 2004; Kanawattanachai & Yoo, 2002).

It can be dangerous, however, to believe that a team which forms trust quickly will translate that trust into a higher level of performance, as the relationship between trust in the team and performance is often quite muddled. While at least one early study on trust in teams did find a main effect of trust on team performance (Klimoski & Karol, 1976), a more recent survey of the literature found that this main effect is inconsistent at best (Dirks & Ferrin, 2001). Some researchers have instead shown that trust is more distal, serving to influence performance through mediators such as sensemaking capability (Akgun, Keskin, Lynn, & Dogan, 2012) or team cohesion (DeOrtentiis, Summers, Ammeter, Douglas, & Ferris, 2013). Others have instead proposed that trust serves as a moderator between motivational constructs and performance (Dirks, 1999; Dirks & Ferrin, 2001). Further complicating the matter, some researchers have proposed that trust contributes to team efficiency, but not to team effectiveness (Aubert & Kelsey, 2003; Jarvenpaa, et al., 2004), hypothesizing a difference in predictive power based on the measure used for team performance. While trust in the team does lead to higher team cohesiveness and satisfaction (DeOrtentiis, et al., 2013; Dirks & Ferrin, 2001), its relationship with team performance is inconclusive at best.

This lack of a conclusive relationship is especially dangerous for groups which have formed swift trust. One unfortunate side effect of forming swift trust is that it tends to be based on assumptions rather than actual evidence (Meyerson, et al., 1996). Because of this, swift trust in the team can be misleading, making the team member vulnerable to social loafing and other process losses which harm team performance. It is only after the team engages in performance episodes that team members can truly recognize whether the team has ability, integrity, and

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benevolence, and is thus truly trustworthy (Mayer, et al., 1995). In this way, team performance episodes serve as indicators of the team's competence, which are then interpreted in order to adjust levels of trust in the team. Teams which form swift trust, based as it is on factors other than the ability and integrity of team members, are in fact blindly trusting their team. This blind trust puts team members in a situation where they make themselves vulnerable to competence shortcomings in their teammates.

Meyerson, et al. (1996) were very cognizant of this danger, pointing out that swift trust does not in itself improve the team, just that it may be necessary for the team to perform early in its tenure. In fact, they end their chapter on swift trust by reinforcing the importance of understanding both the advantages and the perils of swift trust:

> "Ultimately, of course, knowing when to confer trust quickly, and when to withhold or withdraw it, may be crucial to the success of the temporary system."
>
> (Meyerson, et al., 1996, p. 192)

Other researchers on trust have also pointed out that those who trust easily are more likely to be disappointed, as early trust is more irrational than trust built on experience (Weber, Malhotra, & Murnighan, 2005). However, research on the subject has moved away from this level of caution and instead proposed trust as overwhelmingly positive (Colquitt, Scott, & LePine, 2007; DeOrtentiis, et al., 2013; Jarvenpaa & Leidner, 1999; Kanawattanachai & Yoo, 2002). Even researchers who recognize that early trust in the team can be dangerous often still conceptualize the construct as consistently beneficial. Recently, Crisp and Jarvenpaa (2013), building on an earlier contention that trust is not universally positive (Jarvenpaa, et al., 2004), showed that teams which maintained trust later into their tenure showed performance gains, but did not more closely examine teams which formed swift trust in members who lacked competence.

In self-managed teams, performance on team tasks functions as an input to the trust formation process, leading team members to either gain or lose trust in their team based on their perceptions of team competence. This reversal of the causal relationship between team performance and team trust may begin to explain the inconsistent results for previous studies on trust and performance. Perhaps more importantly, the conceptualization of performance as a predictor answers a call from Ilgen, Hollenbeck, Johnson, and Jundt (2005) to address the role of outcomes in the IPO model as inputs to future team performance episodes. While much of the theory on trust hypothesizes that trustors will use competence information to make trustworthiness judgments of others, little attention has been paid to the influence of team performance episodes on trust in the team.

Interestingly, this reversal of the relationship between trust and performance also provides a framework for examining some unique dangers to the formation of swift trust in teams. Team members who have quickly developed trust in one another will be more likely to ignore information during performance episodes which indicates that their trust is unwarranted (Taylor & Brown, 1988). So, in instances where team members should reduce their trust in the team, they will instead be inclined to maintain a high level of trust, keeping them vulnerable to their team's lack of ability or integrity. In this way, swift trust can actually be harmful to the long-term success of the team because it prevents team members from adjusting their trust in the team to an appropriate level.

In this dissertation, I intend to study the antecedents of trust formation in teams to determine which antecedents lead to swift trust. I then intend to determine what causes teams with swift trust to have high vs. low levels of performance early in team tenure. I also intend to show that teams who use performance feedback to properly adjust their level of trust will

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outperform those who maintain a high level of trust even in the face of contrary performance information. By studying the trust in the team over time, I intend to show how successful teams and unsuccessful teams differ in their patterns of trust over time. Also, I intend to show how within-team variance in trust in the team and contribution toward team goals by team members can affect subsequent team performance and trust.

Swift Trust

Originally championed by the Meyerson, et al. (1996) book chapter, swift trust happens when team members in a temporary team form relatively high levels of trust in each other very early on in their tenure. This trust is a reaction that group members have to being placed in an unfamiliar group and tasked with completing goals together in a work environment. Such a situation is filled with uncertainty about other group members, leading to the risk of making oneself vulnerable to the failings of others within the team. To deal with this uncertainty and risk, team members place high importance on initial cues they glean from the team, the organization, and the project they have been assigned, and use these cues to form the trust bonds necessary to depend on one another and make progress toward task performance. In an attempt to explain the mechanisms behind the formation of swift trust, McKnight, et al. (1998) developed a theory of trust formation early in team tenure which was based on some of the ideas that Meyerson, et al. (1996) proposed. They based their theory on three particular antecedents of swift trust: institution-based trust, cognitive processes, and disposition-based trust.

Institution-based trust is concerned primarily with reducing uncertainty through imposition of roles and norms, an idea which figures prominently in the Meyerson, et al. (1996) chapter. Roles provide a framework for predicting the future behavior of the individuals who inhabit them, reducing the perceived risk that these individuals will act in an erratic or damaging way (Meyerson, et al., 1996). In this way, roles serve as a crutch that allows team members to quickly determine how predictable (and thus how trustworthy) their fellow team members might be. McKnight, et al. (1998) refer to this as a belief in the situational normality (the perception that "everything seems in proper order" (Lewis & Weigert, 1985, p. 974)) within the

organization. Team members who act in ways that are inconsistent with their roles, or who do not have well-defined roles, are more likely to behave in a way that invalidates situational normality and thus makes trust less likely.

Another key element of swift trust formation is the use of cognitive processes to justify trusting beliefs, the most important of these being categorization processes. Early in team tenure, team members are likely to use category-based information rather than evidence-based information when determining how much trust to place in the team. Team members will find group membership or demographic information to be more salient and easier to gather than information on competence, and will thus place more weight on these categories when it comes to trust development (Meyerson, et al., 1996). Membership in these categories reduces the uncertainty that team members may feel about the behavior of their team moving forward, as they attribute stereotypical behaviors to their fellow team members in an effort to predict their trustworthiness in the future. By basing their trust in the team on category-based information, team members can form trust beliefs even before the first team performance episode occurs.

The third category of antecedents to swift trust proposed by McKnight, et al. (1998) is disposition-based trust. The addition of disposition-based trust to the previous two categories is important because it was not covered in the initial Meyerson, et al. (1996) chapter and disposition-based trust has long been a fruitful antecedent in the trust literature (Johnson-George & Swap, 1982; Rotter, 1967). One facet of disposition-based trust is *faith in humanity*, which is essentially referred to in other theories of trust as *trust propensity*. Trust propensity is the general belief that people in general are worthy of trust, and that it is not generally risky to place trust in others (Rotter, 1967). Trust propensity has played a key role in theories of trust (Mayer, et al., 1995) as a predictor of trust when little is known about the other party (Bigley & Pearce,

1998). A second important facet of disposition-based trust is *trusting stance*, which is described as willingness to depend on another even if that other may not necessarily be trustworthy. An individual who is high in trusting stance is likely to think that depending on other people is beneficial in general even though it sometimes leads to betrayal (McKnight, et al., 1998).

It is important to note that both Meyerson, et al. (1996) and McKnight, et al. (1998) remain keenly aware that betrayal is a possible outcome for a trusting team member. Neither theoretical framework positions swift trust as categorically positive in nature. Instead, the formation of swift trust is generally seen as an expected outcome for newly-formed teams in a work environment, in that it serves as a mechanism through which the team can get work done in a short time frame. The supposition that swift trust forms (under certain conditions) for team members who are unfamiliar with one another raises the question of what happens when that trust is not rewarded. For this reason, both sets of authors point out that trust itself is not sufficient for team performance, and that swift trust does not necessarily mean that the group will continue to trust one another for the duration of their interaction.

Both articles point out that swift trust may be prone to *trust fragility*, meaning that trust formed in this way is likely to deteriorate over time rather than grow stronger. McKnight, et al. (1998) propose that trust "will be fragile at the start of a relationship because of the tentative and assumption-based nature of its antecedents" (p. 483). This fragility is contingent on whether these original assumptions are upheld by experience with the team, or whether they are shown to be incorrect. Thus, if the team is perceived to be operating with ability and integrity, trust may remain high, but members not living up to previous assumptions is likely to result in a loss of trust, which could ultimately harm the team (Meyerson, et al., 1996). In this way, forming swift

trust may work as a temporary fix that allows groups to perform together early, but over time the trust in the group will break down, leading to poor performance overall.

The cognitive processes involved in assessing others are not simple or straightforward, however. Information which contradicts previous assumptions that team members have made about each other is often ignored or trivialized, and information which confirms these assumptions is given more weight (Taylor & Brown, 1988). Even when presented with solid, logical evidence that their initial assumptions are wrong, team members will be likely to seek out any information that will weaken this evidence in order to maintain their trusting beliefs (Ross & Anderson, 1982). So, swift trust, based as it is on assumptions rather than evidence, may still lead to trust which is durable rather than fragile, a contention supported by both Meyerson, et al. (1996) and McKnight, et al. (1998).

This conclusion is troubling, as it implies that team members are receiving evidence that the team is not trustworthy, but they maintain a level of trust in the team by ignoring or downplaying this evidence. Wouldn't this mean that the trust in the team is unfounded, and possibly in danger of being exploited? In a case such as this, swift trust is not fragile, but it may also not be in the best interest of team members. The circumstances which lead to the formation of swift trust also lead to a swift vulnerability, where teams with high levels of trust will nevertheless experience low performance due to members taking advantage of this high trust.

Traditional Conceptions of Trust

While swift trust has been the focus of this paper so far, it is important to examine the traditional theoretical view of trust in the team. Based on the theory first presented by Mayer, et al. (1995), trust in the team is developed via perceptions of the team's ability, integrity, and benevolence. Ability, in this framework, refers to the general skills and competence of the team

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members in performing tasks that are assigned to them. Integrity, on the other hand, is the impression that the team members follow a set of principles or guidelines which are acceptable for the trustor. Benevolence is the level of attachment that the team members might feel for the trustor, and the likelihood that they would want to look out for the trustor's best interests.

It is obvious that in order to form accurate opinions on these three factors, the trustor must have spent time working with the team in some meaningful capacity so that he or she can observe their behavior. Unlike swift trust, trust based on the Mayer, et al. (1995) model requires time and experience to form correctly. The authors of the model themselves pointed out in a later review that ability and integrity impressions should form fairly quickly, even in temporary teams. Benevolence, on the other hand, takes much longer to determine, and often may not form at all in teams which are together only for the duration of a single project (Schoorman, Mayer, & Davis, 2007). As such, for the remainder of this dissertation, I deal only with ability and integrity, as newly formed teams will simply not have the time necessary to form meaningful impressions of benevolence.

Once the team has had an opportunity to perform together and form impressions of one another, the ability and integrity of their team members should have a large impact on their trust in the team. In this way, trust in the team should shift from assumption-based factors (the McKnight, et al. (1998) model) to impressions of the ability and integrity of the team (the Mayer, et al. (1995) model) as their time together grows. The inaccuracies contained in the initial trust level of the team should be corrected as more information makes the team's actual ability and integrity apparent.

It is important to note that team performance is based in no small part on the actual ability and integrity of the team, while trust is based on the team's perceived level of ability and

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integrity. This can muddle the relationship between trust and performance, as the team's actual ability and integrity will greatly impact how much monitoring behavior is necessary for team success, and teams which have higher levels of trust are less likely have members properly monitor one another during performance episodes (Langfred, 2004). The disconnect between a team's impression of its ability and integrity (trust) and the actual ability and integrity of the team (reflected in team performance) provides a useful explanation for the lack of a causal relationship between trust and subsequent team performance.

Consider, as an example, two teams who have absolute agreement between their perceived ability and their actual ability. The first team has a high level of trust that is warranted due to the team being made up of high performers. This team would generally perform well, and thus their high level of trust would result in high performance. The second team, on the other hand, has low level of trust in their ability, and they are correct in their perception that their team members will need a lot of monitoring and helping behaviors in order to succeed. Based on their low level of trust in their team, they keep a much closer eye on one another, overcoming their deficiencies in ability via tighter team coordination and interdependence. Due to this, the team manages to perform well in spite of their lack of ability, a result which would serve as a counter-example for a relationship between trust and team performance. Due to situations like this, I intend to show that actual ability will have an important role in the relationship between trust and performance.

In a similar fashion, it is essential that team members are able to see and interact with one another in order to complete group goals. While the team's ability is certainly important to team task performance, the attendance of team members during performance episodes is important to their ability to properly coordinate and communicate with one another. A team with a high level

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of trust in one another should generally perform well together, as long as most of the team members are there to work together during team performance. For a team with low attendance, however, a high level of trust can actually be detrimental to the team. Highly-trusting team members, who are willing to assign tasks to each other without monitoring or planning for backup behaviors, are harmed much more when they have absenteeism than a team which does not trust one another so completely. In this way, attendance also serves as an important moderator for the relationship between trust and performance.

Trust and Team Performance

As I point out previously, the inconclusive relationship between trust and performance has long been a focal part of the trust literature. The work on swift trust is no exception to this, as researchers have long sought a link between early trust formation and overall team performance. While studies which examine swift trust and performance are rare, one study found that teams which form high levels of trust early, and maintain that trust throughout the duration of the project, tended to have high performance on team work in an educational setting (Kanawattanachai & Yoo, 2002). This study's findings are problematic, however, as their analyses show that both high and low performing teams began at about the same (initially high) level of trust, but high performing teams gained in trust as the project went on, while low performing teams merely maintained this initial level of trust. These findings point to the key problem with swift trust: it forms as a matter of course, but does not seem to lead to teams working effectively over the duration of their project.

Similarly, in an attempt to examine the longitudinal effects of trust on team performance, Crisp and Jarvenpaa (2013) provided the task of creating a business plan to teams of students who interacted via online communication. They found that early trust did not directly impact the

performance of the team. Instead, early trust led to the creation of group norms toward the completion of the task, which then led to higher levels of late team trust. Trust late in the project directly impacted the performance of the team. Again, it seems that forming swift trust is merely the first in a series of steps which eventually may lead to team effectiveness, but it is not sufficient to impact performance on its own.

These two studies also reveal a problem with the literature on trust and performance in general, namely that performance is only treated as the outcome of team trust, rather than as an input that team members can use to determine the competence of their team. Most teams undergo a series of performance episodes during the completion of any complex task, and each of these performance episodes provides an opportunity to reflect on how the team did and what can be done to improve in the future (Marks, Mathieu, & Zaccaro, 2001). It is only natural to assume that team members will also update their level of trust in each other during this reflection, using the results of the performance episode as a particularly salient cue for whether early trust in the team was warranted. In this way, team members adjust their level of trust in the team through the observation and evaluation of team performance, instead of the other way around.

This reversal of the common causal relationship makes it possible to reinterpret the results of the two studies on swift trust and performance. Kanawattanachai and Yoo (2002) had teams go through week-long cycles where they interacted to make a series of decisions and then received company performance information as a result of those decisions. Trust in the team was measured at the end of weeks 2 (T1), 5 (T2), and 8 (T3). High performing teams experienced a pronounced gain in trust from T1 to T2, while low performing teams did not, indicating that teams which were receiving positive performance feedback tended to use that information to

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increase their trust in the team. Interestingly, post hoc analyses conducted by the authors found that trust in the team did not significantly decrease for teams which experienced low performance, but that they did not gain either. This result may indicate that the cognitive distortion of information contrary to initial assumptions can help to maintain a level of trust even in the face of poor performance.

While Crisp and Jarvenpaa (2013) did not directly measure performance during the duration of the teams working together, they did have some findings which indicate that the team used information from performance episodes to re-evaluate their level of trust in the team. The authors found that trust propensity was negatively related to team performance and unrelated to late trust, indicating that teams who were predisposed to trust each other early and experienced performance shortfalls lost their initial trust in the team. Furthermore, teams with members who had more work experience did not perform significantly better than those who had less, but they did have lower levels of late trust, indicating that team members who had higher early expectations for performance lost trust in their team after observing the team during performance episodes. As we see in the first study, it appears that swift trust does not always lead to team effectiveness, and that performance serves as a guide for teams in determining the level of trust in one another after the initial, assumption-based trust level.

Moderating Factors for Performance and Trust

The true nature of the relationship between team performance and trust is more complex than it would at first seem. Ratings of team performance only serve as a cue for the ability of the team if the ratings are based on an accurate sample of team productivity. If, instead, the performance ratings are perceived to be biased in some way, then they will not be used as proper cues for team ability, and thus will not be used to adjust the level of trust in the team. For this

reason, if team members have an external attribution for their performance, they will discount performance ratings as useful cues for adjusting their level of trust. Similarly, if team members have strong social bonds with one another, they will be more likely to see each other as competent and effective even in the face of contrary evidence. Thus, a team which is highly cohesive will be likely to discount low performance ratings as not representative of the team's true ability, and thus not adjust their level of trust in the team. These two factors, performance attribution and cohesiveness, serve to moderate the relationship between performance and trust, causing teams to maintain high levels of trust even in the face of low team performance.

The idea of an internal (due to the team's ability or effort) vs. external (due to the situation or environment) attribution has long been a part of organizational psychology, beginning with Heider (1958). Employees make attributions for their level of performance all the time, and use these attributions to inform their attitudes and behavior toward coworkers (Staw, 1975) as well as their emotional and motivational states directed at their job (Weiner, 1985). Internal attributions for performance imply that the team has the power to change their performance levels in the future, and that their ability and motivation directly impact the performance of the team. External attributions of performance, on the other hand, imply that the team's performance cannot be affected by the ability or motivation of team members, and is instead based on factors beyond the team's control.

Teams with an internal performance attribution are likely to feel that the ratings of their team's performance are based on the skills, abilities, and work ethic of the team members, and thus see performance as an accurate evaluation of the ability of the team members. For such teams, adjusting trust based on performance information is perfectly logical. On the other hand, teams which have an external performance attribution will see their ratings of performance as

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inaccurately reflecting the ability of their team. Because such teams would see their performance level as being due to factors outside their control, they will not see a reason to adjust their level of trust in the team. In this way, teams with an external performance attribution might maintain their previous level of trust, even in the face of low team performance, because they see their performance as unrelated to the ability and integrity of their team.

The second moderator to the relationship between performance and subsequent trust is team cohesiveness. Generally defined as an attraction to the team or desire to be a part of the team (Festinger, 1950), team cohesiveness is a social construct of team membership. While team cohesiveness has long been studied both as a driver of team performance (Mullen & Copper, 1994) and team viability (Barrick, Stewart, Neubert, & Mount, 1998), it also can serve to make the team overconfident in its abilities, resulting in groupthink (Janis, 1972). This ability of team cohesiveness to influence the attitudes and beliefs of team members is the key to its moderating effect on the relationship between performance and trust in the team.

As McKnight, et al. (1998) point out, social mechanisms such as team cohesiveness provide a platform for creating a robust level of trust in the team. This is generally considered to be beneficial when the team is made up of members who are high in ability and integrity, but when team members are not high performers, the robustness of swift trust can be dangerous. When a team is highly cohesive, members are likely to disregard information which would lead them to lose trust in the team, instead maintaining a positive attitude toward their team members, even when faced with negative evidence (Taylor & Brown, 1988). In addition, high levels of team cohesiveness can lead to a pressure to conform to team norms (Oreilly & Caldwell, 1985), making it more likely to consider team performance to be appropriate, even if it is low. In this

way, teams who are high in cohesiveness will be likely to maintain high levels of trust, even when their team performance is low.

Within-Team Variance in Trust

So far in this dissertation, I have been theorizing about trust in the team as if it were uniform among the different team members. This is not a particularly unique stance to take, as researchers have often chosen to aggregate the trust levels of all team members into a convenient mean, and use that mean as a measure of the team's overall trust in one another. Recently, however, scholars have begun to use the variability of a particular construct across different members of a team or an organization as a dependent or independent variable in its own right (Ostroff & Fulmer, 2014; Scott, Barnes, & Wagner, 2012). Scholars in the trust literature have also begun to consider trust diversity as a valuable subject of study (Ferguson & Peterson, 2015; Fleeson & Leicht, 2006). Based on these examples, I intend to consider the variance in trust across the different team members as an interesting construct for study.

As my previous arguments state, trust serves both as a useful mechanism for encouraging communication and interaction within the team and as a buffer against monitoring and helping behaviors which may assist the team in accomplishing its goals. As a general rule, a team member who has a high level of trust in the team should be more willing to allow other team members to take on responsibilities, even if the team member is unable to monitor their progress. However, that same team member is also likely to feel a desire to interact with the rest of the team which could help to improve the tightness of team interdependency linkages (Thompson, 1967). So, it would be both beneficial and detrimental to have a team made up entirely of high trust members. Similarly, a team member who has little trust in the team is more likely to avoid spending time with other team members and building a level of team cohesiveness, possibly

reducing team effectiveness. However, such a team member would be more likely to "check in" on other team members, monitoring their progress toward goals, which is an essential teamwork behavior (Marks, et al., 2001).

Studies of diversity in trust are quite rare, and have concentrated on the concept of *trust asymmetry*, which is defined as a difference between the perceptions of trustworthiness for two actors within the same team or organization (Bergman, Small, Bergman, & Rentsch, 2010). Studies of trust asymmetry have generally found that it results in higher levels of relationship conflict in the team, which reduces team performance levels (De Jong & Dirks, 2012; Ferguson & Peterson, 2015). Members of the team, unwilling to come to a consensus about how much to trust one another, become frustrated with one another and stop working effectively together (Bergman, et al., 2010).

Similar to the other research on trust that I have covered in this dissertation, this finding is influenced somewhat heavily by a perception that trust is always beneficial. Trusting the team is often seen as the "correct" viewpoint, one which leads to cooperation and greater team performance. However, when trust is considered both helpful as well as harmful, the benefits of diversity in level of trust across the team members becomes more apparent. Furthermore, the problems with high levels of trust that I propose occur early in team tenure, and much of the work on trust asymmetry has been in teams which have worked together for some time (Bergman, et al., 2010; De Jong & Dirks, 2012).

Given that high levels of trust and low levels of trust both bring their own benefits and problems, it could be somewhat dangerous to build a team whose members are very similar in their levels of trust. Instead, it would be more worthwhile to have a team made up of members who vary widely in their level of trust in the team. In such a team, the cohesiveness and

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communication enhancements that high levels of trust provide can help to offset the standoffish nature of low trust members, while the increased monitoring behaviors of low trust members can help to prevent social loafing problems that would fester, unseen, in high trust teams. By maintaining a diverse level of trust across team members, many of the problems I discuss with trust in this dissertation can be reduced.

Trust and Team Processes

While the linkages between trust and team performance are often more tenuous than we would suspect, it is far easier to draw a linkage between trust and team processes. Team processes are defined as "members' interdependent acts that convert inputs into outcomes through cognitive, verbal, and behavioral activities directed toward organizing taskwork to achieve collective goals" (Marks, et al., 2001, p. 357). In order to properly organize work with one another, it is important that the team members have trust in the team.

For cognitive organizing activities, high trust makes it likely for team members to exchange information with one another (Droege & Anderson, 2003), which can result in better transactive memory for the team (Robertson, Gockel, & Brauner, 2013). Team members who trust one another will be more likely to use the information they receive to make sense of the problems they are facing, as well (Akgun, et al., 2012). In this way, teams made up of members who trust one another will be likely to work together to determine the best course of action going forward, rather than each member dealing with the problem on his or her own.

Trust also has the benefit of reducing conflict among team members, improving the verbal and behavioral organizing that the team does. Trust can serve to buffer a team from the detrimental effects of relationship conflict, allowing team members to be contentious in decision-making environments without harming the cohesiveness or performance of the team (Peterson &

Behfar, 2003). In this way, the team gains the benefits of task conflict without the problems caused by relationship conflict (Simons & Peterson, 2000). So, teams which are high in trust are able to work together in organizing their tasks without fear of offending or otherwise conflicting with one another.

So, while trust may not provide an easy-to-determine benefit for team performance, it does lead to better coordination and cohesiveness among team members (Mach, Dolan, & Tzafrir, 2010). This benefit leads directly to members more effectively planning during transition phases of the Marks, et al. (2001) model, as well as communicating more efficiently during action phases. If team interdependence is a complicated machine, with many moving parts that need to work together, trust serves to lubricate all of the parts so that they work smoothly with one another.

Within-Team Variance in Contribution to the Performance Episode

Team members do not contribute equally to the performance of their teams, but instead contribute at different rates, and hopefully are able to produce high quality results as a gestalt result of their individual efforts. This within-team variance in contribution provides team members with yet another cue about the ability and integrity of one another. When team members contribute relatively equally during performance episodes, it is likely that they will not perceive any lack of integrity or ability in each other, because all members are putting forth a good faith effort to contribute to team outcomes. However, when the contribution to performance is widely different across the members of the team, this provides a salient cue that members who are contributing less are lacking in ability, integrity, or both.

A team which has high variability in individual contribution would generally be seen as suffering from *social loafing* (Latane, Williams, & Harkins, 1979). This phenomenon, where

individuals contribute less in groups than they would as an individual, was studied for many years in the social psychology literature before Latane, et al. (1979) coined the term social loafing. While studies of the antecedents of social loafing are quite common, the reactions to social loafing from team members are less understood. Some studies did point out that social loafing changed the expectations for the performance of co-workers (Karau & Williams, 1993; Williams & Karau, 1991), which would indicate that social loafing could change impressions of the social loafer's ability. In addition, a study on social loafing in business classrooms indicated that teams which contained social loafers often saw them as lacking in motivation and ability, and tended to ostracize them from the group and continue working without their input (Jassawalla, Sashittal, & Malshe, 2009), a result which indicates that trust in these team members would drop.

High variance in individual contribution provides a cue to the ability and integrity of the group, indicating that team members may be attempting to "free ride" on the productivity of the rest of the team. This result will naturally cause the other members of the team to reduce their team trust, as they realize that they may not be willing to make themselves vulnerable to social loafing team members. This variance also has the effect of making those who work harder feel like martyrs, sacrificing their time and effort in order to improve team performance without assistance from the rest of the team (Hart, Karau, Stasson, & Kerr, 2004; Jassawalla, et al., 2009), which would likewise reduce their subsequent trust in the team.

Trust in the Team Over Time

While the literature on swift trust would indicate that trust would generally start high in groups given a series of tasks to accomplish (Meyerson, et al., 1996), and theories of trust would indicate that trust in the team would grow over time (Mayer, et al., 1995), few studies have

examined the levels of trust in a team over a series of time periods to determine the trajectories that trust would take. In one study of MBA courses, Kanawattanachai and Yoo (2002) did measure trust at three different time periods over the course of a semester, and found that trust generally rose from T1 to T2, but then dipped slightly between T2 and T3. Other studies which look at trust longitudinally (and there are few), have generally found that trust starts high and remains high throughout the completion of team projects for most teams (Crisp & Jarvenpaa, 2013; Jarvenpaa, et al., 2004).

The existing trust literature, however, often studies teams for a very short period of time. Most studies of trust in teams occur in time periods of less than one month, and often only have one or two performance episodes during that time. As a result, the team does not have sufficient time to properly overcome their initial high level of swift trust and adjust their trust appropriately for the ability and integrity of their team. As described earlier in this dissertation, the process through which teams should adjust their trust level is fraught with perceptual and cognitive errors and biases which result in trust remaining high, as indicated by the previous literature. However, I would argue that teams which seek to have high levels of performance must come to a decision point at which they intentionally examine their level of trust in the team and compare it to the results that the team has achieved thus far in order to determine if their trust in the team is warranted. This sort of decision point is sometimes precipitated by an *anchoring event*: when team members need something essential from one another, and receive considerably more or less than they would expect from a member of their team (Ballinger & Rockmann, 2010).

Many groups lack such an event, but do have a particular moment in their life-cycle when they break from their standard routines and attempt novel solutions to their problems (Gersick & Hackman, 1990). This moment, as prescribed by the theory of punctuated equilibrium (Gersick,

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1988; 1989), is generally the midpoint of the team's progress toward a goal. At the midpoint, the team's progress often becomes more salient, and team members compare their expectations of team progress to the actual completion of tasks toward their goal to determine if they are performing according to their schedule. If performance is different from their expectations, then the team makes changes in their routines and behavior at that point in order to fix any problems they perceive (Gersick, 1989). In the context of this dissertation, the midpoint of the team's project cycle presents a unique opportunity to go back and consider the cues about the ability and integrity of the team which may have been ignored or downplayed earlier. In this way, the midpoint of the project provides a needed return to salience for this information, so that it can be considered in tandem with the performance progress of the team.

So, teams at the midpoint of their project completion, who have until now maintained a high level of trust due to cognitive or social biases, now re-evaluate these earlier cues in light of their progress toward the team's overall goals. This re-evaluation serves to break some of the influence that these biases have had on their level of trust in the team, and thus lead the group to adjust their trust to more closely follow the team's progress toward performance goals. In this way, teams should see a pronounced drop in team trust at their temporal midpoint as they finally set trust to a level which is appropriate for the team's ability and integrity.

It is important to note that these teams, even after adjusting their trust levels, have a significant number of social ties to their team which will contribute to the team's cohesiveness and communication during performance episodes. While teams will generally make changes in their routines during the midpoint, they can then use these new routines to work more effectively during the last half of their progress toward their goal. So, a team which significantly reduces its level of trust will implement more monitoring and helping behaviors during team performance

episodes, and should see some performance gains as a result of these actions. This gain in performance will then be used as a cue for team members being more motivated, having higher ability, and performing their tasks with more integrity, which should lead to increased trust after each performance episode. Once the midpoint has passed, and teams have adjusted their level of trust down to an appropriate level, trust should increase for the remainder of the team's time together.

Research Questions

1. *What factors cause groups to form swift trust (or to avoid forming swift trust)?*

2. *When is swift trust a benefit for (or a detriment to) team performance?*

3. *What factors make it likely (or unlikely) for teams to maintain high levels of trust even in the face of evidence of poor team performance?*

4. *How does trust develop in teams over time?*

HYPOTHESES

Antecedents of Swift Trust

When introduced to the team for the first time, a trustor must evaluate the other members and decide if he or she is willing to make himself or herself vulnerable to them. The first of these traits which serves as an antecedent of swift trust is *trust propensity*. Described in McKnight, et al. (1998) as "faith in humanity", trust propensity is a belief that people are generally trustworthy. Trust propensity goes back to the early days of research on trust, first seen as the sole contributor to trust in others (Rotter, 1967), but later used as a component of trust development (Johnson-George & Swap, 1982; Mayer, et al., 1995).

For many who do not study trust, trust propensity may seem to be indistinguishable from swift trust, as both deal with trusting others in the absence of evidence of their competence, integrity, and benevolence. The differences between the two constructs are nuanced, but important to understanding them. Swift trust is a measure of how trustworthy one finds a particular person, group, or organization during initial exposure to them, and includes institution-based trust, cognitive processes, and disposition-based trust (McKnight, et al., 1998). In contrast, trust propensity is solely a measure of disposition-based trust, and thus represents a faith that all people, in general, are trustworthy by nature. Because of this, trust propensity is commonly seen as an antecedent for trust in others, and I will be using it that way as well.

Figure 1: *Antecedents of Swift Trust (All Variables at Individual Level)*
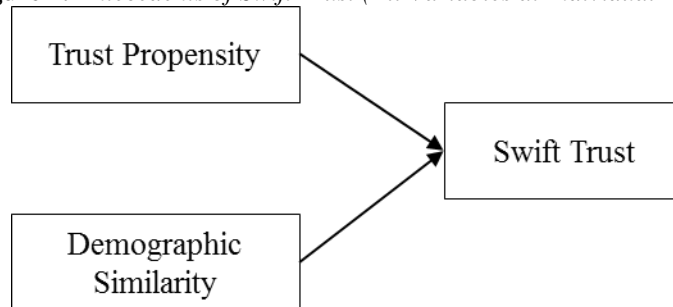
Trust propensity plays a large part in the level of trust that team members have in each other early in team tenure, but also continues to have an effect on trust in the team as time goes on (Jarvenpaa, et al., 1998). Given that a new team is a relatively novel situation (where a trustor has a lack of knowledge of the abilities of the other team members and little experience interacting with them), trust propensity will play a relatively large role in determining the trust that will be initially placed in the team (McKnight, et al., 1998). As such, trust propensity should directly predict swift trust in the team.

Hypothesis 1a: *Trust propensity is positively related to swift trust.*

The second antecedent of swift trust that I will consider is *demographic similarity* (sometimes referred to as demographic homogeneity). McKnight, et al. (1998) point out that categorization processes play a large role in determining the level of swift trust in the team, as members place each other into categories and form opinions on the trustworthiness of the team based on their preconceived notions about those categories. So, a team which is composed of primarily similar individuals will be likely to have higher levels of swift trust due to a belief that those who are similar to oneself will likely look out for one's best interests.

The power of demographic similarity on team outcomes is well researched in the teams literature. Teams which are made up of similar members are more likely to feel committed to their team (Tsui, Egan, & Oreilly, 1992), thus making them more likely to feel an attachment to other team members and a willingness to be vulnerable to them. Teams made up of similar members are also more likely to spend more time communicating with one another (Watson, Kumar, & Michaelsen, 1993) and communicate more favorably with one another (Dose & Klimoski, 1999) early in team tenure, building trust linkages much more quickly than teams

made up of demographically diverse members. Thus, demographic similarity will predict swift

trust in the team.

Hypothesis 1b: *Demographic similarity is positively related to swift trust.*

These antecedents of swift trust are shown in Figure 1. The two antecedents chosen are

intended to represent the most common and salient factors that team members will likely use to

build initial swift trust in their team before they have had a chance to work closely together for

any significant length of time. This model is designed to answer the first research question

proposed and determine factors which lead to the formation of swift trust.

Swift Trust and Performance

The theoretical model specified in Figure 2 is dedicated to attempting to answer the

second research question, on the effects of swift trust on team performance. As stated in the

introduction to this dissertation, the main effect of trust on team performance has been difficult

to determine via empirical study, with many non-significant results (Dirks & Ferrin, 2001).

While some studies have found that trust positively impacts team performance, they often are

measuring team efficiency rather than team effectiveness (Jarvenpaa, et al., 2004). While

efficiency is an interesting team outcome, a true measure of team performance must consider not

only the speed with which the team produces results but also the accuracy and worth of those

results themselves. Because the link between trust and performance is so muddled, I choose

instead to forego hypothesizing a main effect relationship, and instead posit two interaction

relationships which sum to a non-significant main effect.

I propose instead that trust provides the team with the desire to share work, providing the

mechanism through which team members will interdepend on one another to complete team

goals. In this way, trust serves as the lubricator for unmonitored individual work on team

projects, giving team members the ability to efficiently apply their effort on their own portions of the project without being interrupted by other members checking on their progress. This aspect of trust has been shown empirically: teams which are high in trust are less likely to monitor one another, assuming that their members are working diligently (Langfred, 2004). High trust also results in overconfidence in the team's abilities, even in an environment (lack of time spent with team members, for instance) with an absence of evidence on the ability of the team to complete goals (Gargiulo & Ertug, 2006), meaning that team members with high trust are likely to assume the best of their counterparts' abilities.

Figure 2: *Swift Trust and Team Performance (All Variables at Team Level)*
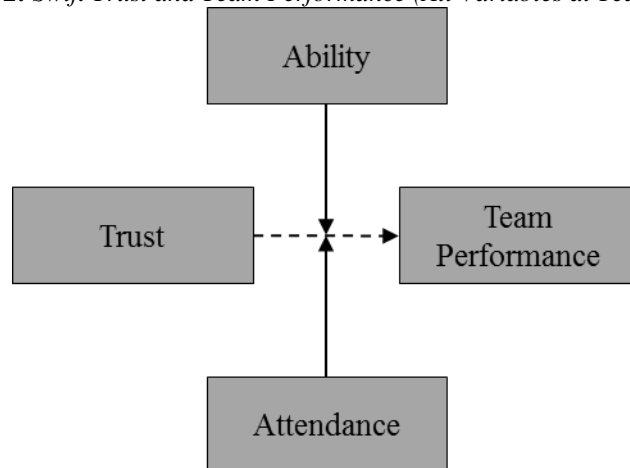
High team trust is thus a double-edged sword, as team members are confident in one another and do not monitor their fellow team members, the team is able to dedicate almost all of their resources to working directly on team projects. For a team which is high in ability, this represents the perfect team interdependence structure: ample time to work without distractions. Thus, trust is positively related to team performance in a team with high ability, as the increases in efficiency also result in increased team performance.

However, for a team with low ability, this high trust interaction pattern can be disastrous. The monitoring and helping behaviors that are normal for teams with lower trust in one another

help to offset the lack of ability that some team members may have. By working together, the

team is able to keep an eye on each other and overcome shortcomings. Trust removes these

safeguards, however, making the team less able to weather a lack of ability or competence in the

team. As a result, higher trust will actually harm the performance of a team with low ability,

resulting in a negative relationship between trust and performance for such teams.

Figure 3: *Interaction Plot for Ability*
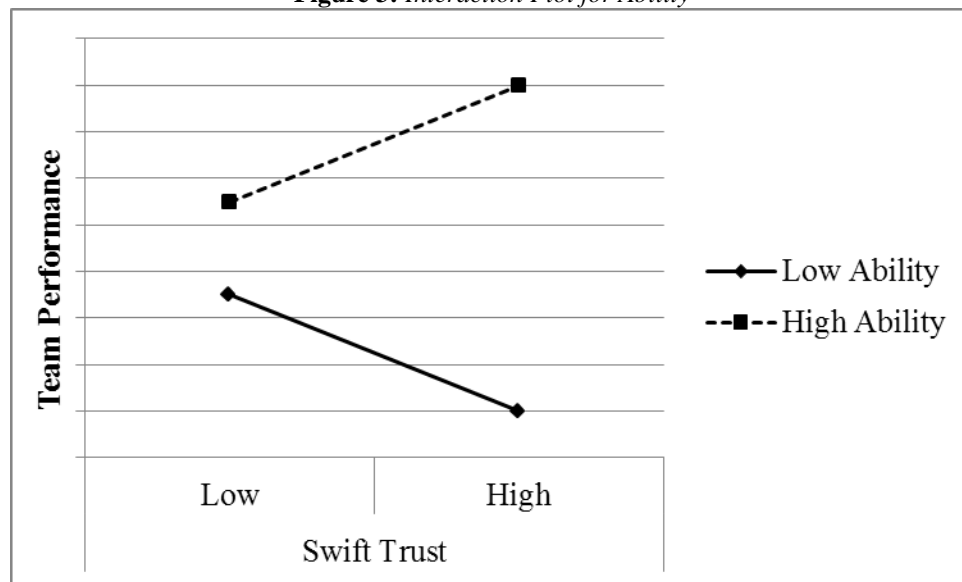
The interaction pattern for trust and team ability is plotted in Figure 3. For teams with

high levels of ability, the relationship between swift trust and performance is positive. However,

for teams with low ability, the relationship is negative. In a way, this represents the difference

between the perceived ability of the team and the actual ability. For a team which has high

ability, the team's performance is highest when trust in the team (based in part of perceptions of

the team's ability (Mayer, et al., 1995)) is high. Likewise, for teams with low ability, the best

results are obtained when trust in the team is low. In other words, teams perform the best when

their perceptions of team ability (represented by trust in the team) match the actual ability of

their team members.

Hypothesis 2: *The ability of the team will moderate the relationship between swift trust and team performance such that the relationship will be positive for high ability and negative for low ability.*

Attendance at team performance episodes is also a key factor in the relationship between trust and performance. The lack of monitoring and overconfidence that result from high levels of trust means that team members are expected to complete their portions of team projects on time and with the utmost of their ability. When a team has low attendance, however, team members will be likely to shirk their duties, including avoiding performing their portion of the work at all (social loafing (Latane, et al., 1979)). Rather than simply lacking the ability to perform, and requiring help from other team members, low attendance teams have portions of the project which go unfinished due to a lack of effort, meaning lower performance for the team.

Figure 4: *Interaction Plot for Attendance*
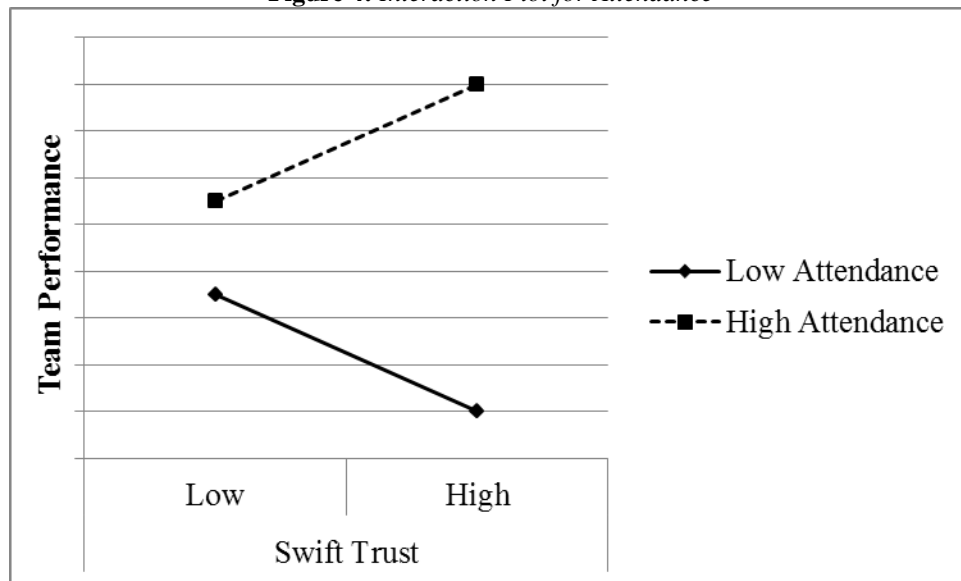
The interactive effects of swift trust and low attendance are similar to those that we see for swift trust and low ability. The more trust that is placed in a group with low attendance, the worse the team will perform, as team members who are not properly monitored are unavailable

to do their share of the work. For high attendance teams, more trust means that the work can be spread more evenly, and thus the team can put more of their effort toward the achievement of team goals together. This interactive relationship is plotted in Figure 4.

Hypothesis 3: *The attendance of the team will moderate the relationship between swift trust and team performance such that it will be positive for high attendance and negative for low attendance.*

Variance in Trust Predicting Team Performance

While the scant prior research on variance in trust and team performance indicates that trust variance can lead to more team conflict which will be harmful to team outcomes (Ferguson & Peterson, 2015), the tenuous nature of trust's relationship with performance coupled with the downsides of high levels of trust lead me to believe that trust diversity can be a net positive for teams. Certainly, diversity in other important psychological constructs has been shown to be a benefit to team performance in the past (Jehn, Northcraft, & Neale, 1999), and diversity has long been beneficial to teams over the long term, even when it can lead to some difficulty at the beginning.

The benefits of high trust, namely higher group cohesiveness (Mach, et al., 2010) and greater team interaction (Tsai & Ghoshal, 1998), work to counteract the lack of interactivity that comes from low levels of trust. Likewise, the extra monitoring and backing up behaviors that members with low trust in the team are prone to undertake (Langfred, 2004) provide a buffer against teams spending too much time on non-work interaction or losing focus on team goals, two possible outcomes of a team made up solely of high trust members. Diversity in trust, like diversity in values or background, should prove to be a net benefit for team performance.

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Hypothesis 4: *Variance in trust across members of the same team will predict team performance such that teams with more variance in their trust in the team will have higher performance.*

Trust Predicting Team Processes

In order for a team to work together to its full potential, they must coordinate their activities during transition and action phases, as well as develop their interpersonal processes (Marks, et al., 2001). During the transition phase, trust benefits the team because it increases the information sharing among team members, leading to mission planning which is more complete and considers all team members' abilities and skills (Droege & Anderson, 2003; Robertson, et al., 2013). Also, trust makes team members more likely to share their ideas with the group, making it more likely that the team can develop alternative plans with a better chance of success than those taken already, improving strategy formulation for the team as a whole.

During action phases, trust can lead to higher levels of interaction and more frequent communication (Becerra & Gupta, 2003), which will improve the ability of the team to coordinate their efforts and interdepend on one another. While high levels of trust may reduce monitoring and backup behavior, the benefits in cohesiveness from high trust help the team to work more closely together, improving their coordination. The real benefits of high trust come in the interpersonal processes. By reducing relationship conflict among team members, trust provides built-in conflict management. Teams which trust one another will make better use of their team processes, and be more likely to undertake team processes in the first place, then those who do not have high levels of trust.

Hypothesis 5: *Trust in the team will positively predict subsequent effectiveness of team processes.*

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Performance and Subsequent Trust

In hopes of answering the third research question I proposed, I need to examine how teams use performance episodes to correct their initial levels of trust in the team, and what factors make this easier or harder to do. Teams which have experienced one performance episode now have exchanged vital information about the ability and integrity of team members. This information, according to Mayer, et al. (1995), should then be used to make an informed evaluation of the trust one should have in the team. Swift trust, based as it is on a lack of information on the rest of the team, should be replaced with a more accurate and useful level of traditional trust. This new level of trust will be based on factors which are salient to and important for the team members, such as ratings of the team's performance. Ratings of performance are important to members within the team, as they represent an evaluation of the team's overall ability, and thus a reflection of the ability of the individual members as well. They are also often used to evaluate individual team members in their progress toward their own career goals.

This use of the team performance outcome as an input to future team processes answers a call for team research to examine the temporal and cyclical nature of team interaction (Ilgen, et al., 2005). Team performance episodes do not operate in a vacuum, but instead serve as an opportunity for individuals to learn more about their fellow team members. Newer models of trust in teams have likewise begun to consider how team performance can serve as an input to the trust evaluation of trustors within the team (Wildman, et al., 2012). Given that performance episodes, and later evaluation of team behaviors during such episodes, are a cornerstone of the modern teams literature (Marks, et al., 2001), this use of team performance as an independent variable makes sense.

Figure 5: *Theoretical Model for Subsequent Trust*
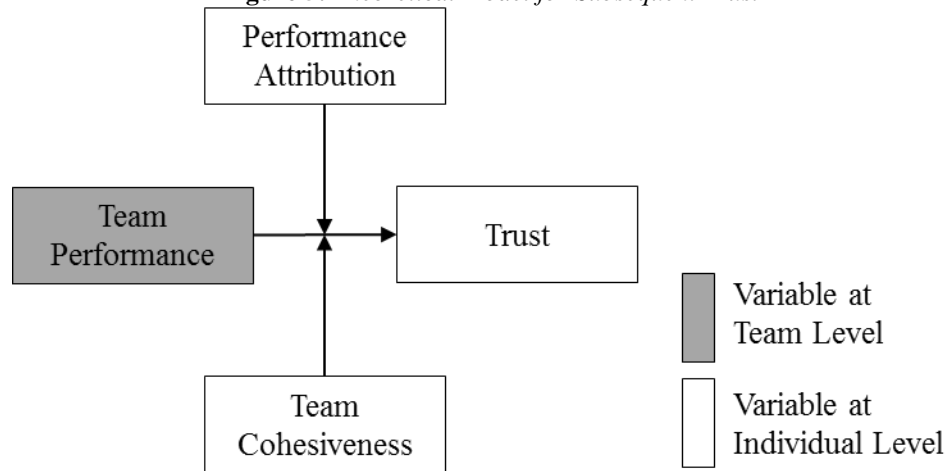
While performance serves as an indicator of the ability and integrity of the team, it also serves as an indicator of the probability of future collaboration with the team resulting in a successful outcome. Previous experience with others that has resulted in successful outcomes makes it more likely that one will place themselves at risk from those others again in the future, thus increasing the trust in those others (Schoorman, et al., 2007). Likewise, if past performance episodes are negative, then expectation for future success is lower, and one becomes more guarded toward those with whom one performed poorly. As such, past performance levels will directly predict long-term trust in the team.

Hypothesis 6: *Team performance will be positively related to subsequent trust in the team.*

The attributions that the team members have for team performance are a key part of their adjustment of their trust level in the team. If the performance of the team is truly seen as due to the ability and integrity of the team members, then poor performance should naturally lead to low trust in the team and good performance should lead to high trust in the team. However, if the performance of the team is seen to be due to external factors beyond the team's control (such

as the manager rating their performance, or the lack of information on expectations for the team), then the performance level of the team will not be seen as a true indicator of the team's ability and integrity, and trust levels will remain the same as they were before. In teams with already high levels of swift trust, the result is a team which maintains a high level of trust even in the face of poor team performance.

Figure 6: *Interaction Plot for Attribution*
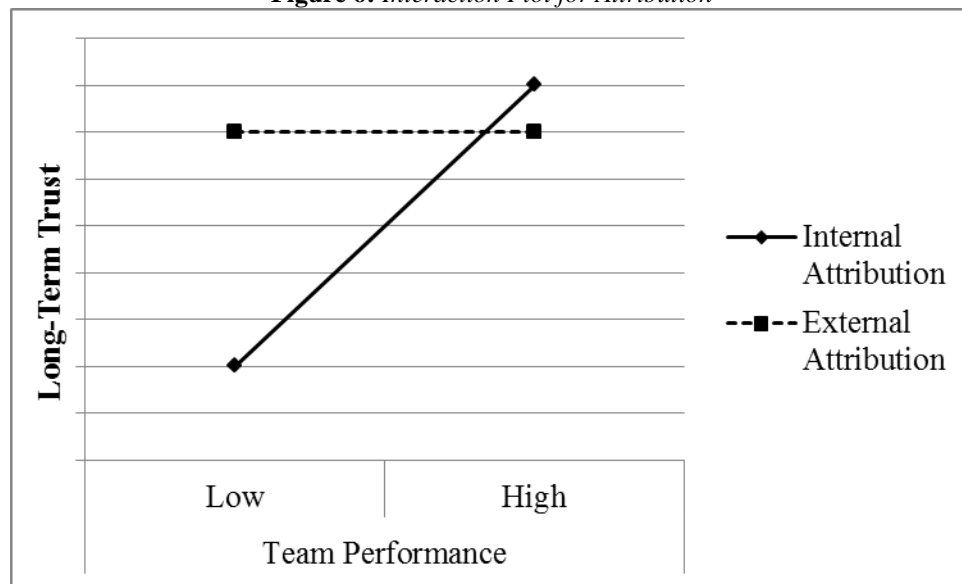
Thus, the interaction between performance and attribution should look as plotted in Figure 6. Teams with an internal attribution for their performance will have a positive relationship between performance and subsequent trust in the team, as they adjust their level of trust accordingly with team ability and integrity cues. Teams which have an external attribution for their performance will see no significant relationship between performance and their subsequent trust level, as they disregard the performance information as not being an accurate depiction of the ability and integrity of the team.

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Hypothesis 7a: *The attribution that the team member has for the performance level of the team will moderate the relationship between team performance and subsequent trust such that the relationship will be positive when the attribution is internal (due to the team), and there will be no relationship when the attribution is external (due to the environment).*

Team cohesiveness also plays an important moderating role in the adjustment of trust due to performance levels. Teams who are high in cohesiveness are likely to ignore low performance when it comes to their impressions of the ability and integrity of the team, and thus maintain their previous level of trust in the team regardless of the team's performance shortfalls. In contrast, teams with low cohesiveness will consider the performance information as a proper indication of the ability and integrity of the team, and thus adjust their level of trust accordingly. In other words, the interaction pattern will look like that which is plotted in Figure 7. Teams who have low cohesiveness will keep the positive relationship between performance and trust in the team, while those with high cohesiveness will not show any relationship between the two.

Figure 7: *Interaction Plot for Team Cohesiveness*

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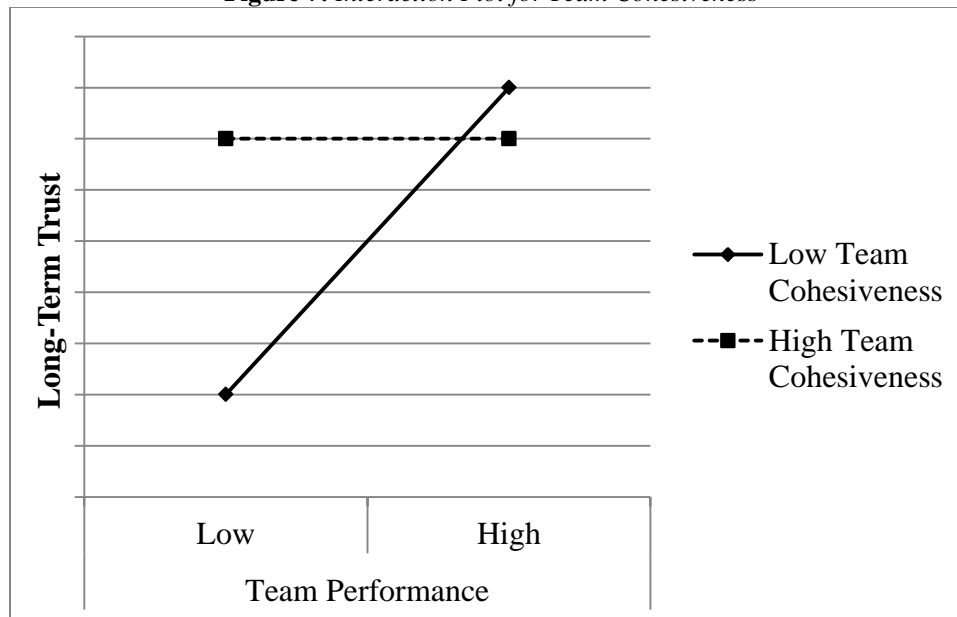
Hypothesis 7b: *Team cohesiveness will moderate the relationship between team performance and subsequent trust such that the relationship will be positive when team cohesiveness is low, and there will be no relationship when team cohesiveness is high.*

Variance in Individual Contribution and Trust

While team members can be expected to vary somewhat in their contribution to the team's progress toward goals, a large variance in individual contribution generally indicates that the team is suffering from social loafing (Latane, et al., 1979). Teams which have low variance in contribution will generally see each other as contributing appropriately to the success of the team, and thus be unlikely to change their perception of the team's ability and integrity. In such teams, trust will be adjusted based on performance cues and biased by psychological factors as I have discussed earlier in this dissertation. However, for teams with a high variance in individual contribution, team members will have an additional piece of salient information about their team.

Faced with this new information, team members will use the individual contribution of their peers as an indicator of the ability and integrity of the team as a whole. In a team where the contribution levels are more varied, the natural conclusion is that some group members feel that they can get away with withholding effort from the team performance episodes (Hart, et al., 2004; Price, Harrison, & Gavin, 2006). This serves as a cue that those team members may lack in ability and integrity, meaning that remaining vulnerable to these individuals would be unwise. As such, the members of a team with high variability in contribution would be likely to reduce their level of trust in the team.

Hypothesis 8: *The variance in contribution to the performance event among team members will be negatively related to subsequent trust in the team.*

Trust Dynamics Over Time

As Gersick (1988) predicted, teams generally see the midpoint of their progress toward their goal as a time to compare what they have done with their expectations. At this time, the ability and integrity dues that team members use to set their level of trust in the team become more salient. In addition, the team's level of performance is also more salient at the midpoint, as team members compare their actual performance to the level of performance that they expected to achieve. The end result is a point in time where team members are forced to confront the biases they have used to maintain high levels of trust in the team with solid factual information on their progress toward their goals.

In this way, the midpoint of the team's project cycle presents an opportunity for teams who have maintained an artificially inflated level of trust to make corrections to their trust level based on concrete information on the ability and integrity of the team. This means that those teams which did not properly adjust their trust in the team will do so at the midpoint, resulting in a drop in trust for many groups at that particular period in the team's life-cycle.

Hypothesis 9a: *Before the midpoint of team tenure, change in trust for each time period will be significantly greater than 0. Change in trust over time for the period during the midpoint of team tenure will be significantly less than 0.*

After the midpoint, teams still possess a history of social interaction and adaptation to one another which includes team cohesiveness and social ties. This history provides a solid foundation on which the team can build trust for the remainder of the project. In addition, the added monitoring and helping behaviors caused by a drop off in trust will serve to improve the

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team's performance on their tasks, leading to more positive examples of team ability and integrity as the team works together. As a result, the trust in the team will increase steadily from the midpoint onward as teams experience the benefits of better team processes and cohesiveness.

Hypothesis 9b: *After the midpoint of team tenure, change in trust over time for each period will be significantly greater than 0.*

METHOD

Sample

Participants were business majors in an undergraduate HR course at a large university in the Midwestern United States. The students were enrolled in 12 recitation sections of 40 students each (for a total of 480 students), and each recitation section was separated into 8 teams of 5 members each (for a total of 96 teams). Teams were created such that any one recitation section would have teams which were roughly equivalent in their makeup with regards to gender and native language, but still varied greatly in demographic makeup between recitation sections. While teams were put together to ensure equivalence of demographic makeup, members were still assigned to teams randomly from their constituent demographic groups. Overall, 42% of the sample was female, and 27% of the sample was made up of students for whom English was not their native language.

The use of a student sample was important in this case because it makes it possible to assign participants to teams randomly, but still provided an opportunity for the teams to work together on a project over several weeks. In addition, in order to obtain true swift trust measures, new teams had to be made up of members who were not particularly familiar with one another, and a student sample in a large business school made that possible. Further, by following teams from their first meeting through completion of several performance cycles, I saw the development of trust linkages among the team as they occurred naturally.

Procedure

Participants worked as part of a team to complete a series of 4 case question assignments where they developed HR solutions for a fictitious company. These assignments required the teams to work together and come up with written recommendations for actions to be taken by the

Table 1: *Data Collection Schedule*

Phase	Week Measured	Type of Measure	Measure
Before First Meeting (T0)	Week 2	Survey	Trust Propensity
		Survey	Agreeableness
		Survey	Demographic Similarity
After First Meeting (T1)	Week 3	Survey	Swift Trust
Case 1 (T2)	Week 4	Grades	Team Performance
Transition Period (T3)	Week 5	Survey	Performance Attribution
		Survey	Team Cohesiveness
		Survey	Team Processes
		Survey	Individual Contribution
		Survey	Trust
Case 2 (T4)	Week 7	Grades	Team Performance
Transition Period (T5)	Week 8	Survey	Performance Attribution
		Survey	Team Cohesiveness
		Survey	Team Processes
		Survey	Individual Contribution
		Survey	Trust
Case 3 (T6)	Week 10	Grades	Team Performance
Transition Period (T7)	Week 11	Survey	Performance Attribution
		Survey	Team Cohesiveness
		Survey	Team Processes
		Survey	Individual Contribution
		Survey	Trust
Case 4 (T8)	Week 14	Grades	Team Performance
Transition Period (T9)	Week 15	Survey	Performance Attribution
		Survey	Team Cohesiveness
		Survey	Team Processes
		Survey	Individual Contribution
		Survey	Trust
All Semester		Grades	Ability
		Grades	Integrity

company for a series of HR challenges. Four raters (who were unaware of the hypotheses being

studied) independently rated each assignment to provide a performance rating for the team on

that assignment. Surveys were administered online to the participants before they first met with

their team, and then periodically throughout the semester in order to determine the level of team trust and other variables. The schedule for data collection is presented in Table 1.

To prevent common method bias, survey items which relate directly to one another were lagged by at least a week whenever possible. In this way, the survey items which were collected at T0, for instance, should be as free as possible from common method bias with those collected at T1. For the variables for Hypotheses 7a and 7b, however (performance attribution, team cohesiveness, and trust), the survey data was collected at the same time. In this case, I included interaction terms for the first two variables with an objective measure of team performance, and believe that this should prevent some of the problems with common method bias.

Measures

All survey measures were collected using multiple-item scales, and to ensure that the scales were loaded onto the correct construct, a confirmatory factor analysis (CFA) was conducted for each. In every case, the set of items which best fit a single-construct model was used, with no factor loading lower than 0.40. All survey measures used a 5-point Likert scale from *strongly disagree* (1) to *strongly agree* (5) unless specifically mentioned otherwise. All survey items have been included in Appendix A, with those which were reverse-coded indicated with an (R). Items which were dropped from the measure due to low factor scores are in italics. Means, standard deviations, and bivariate correlations are displayed in Table 2, while fit statistics for the factor analyses are shown in Table 3.

Following the recommendations from Hu and Bentler (1999), I chose to report RMSEA, CFI, SRMR, and Chi-square for each CFA. The general rule of thumb for such fit indices is for RMSEA to be less than 0.07, CFI greater than or equal to 0.95, and SRMR less than 0.8. As Table 3 shows, some variables did have slightly higher RMSEA numbers than desired, but were

still within the proper range for the other two fit indices. Any anomalies encountered during the CFA are reported under the individual variables below.

For the survey measures collected, I dropped any surveys that were completed in less than 3 seconds per item, and any surveys which had the same values for both forward- and reverse-coded items. I performed this data cleaning to ensure that responses from non-conscientious participants were not counted as valid entries. Out of the 576 surveys possible, I excluded a total of 23 (3.99%) due to these factors.

A Note About ICC Values

For ratings of team performance and individual contribution, both of which feature multiple raters rating a single target, I will report ICC(1) and ICC(2) values as well as Cronbach's alpha. While the general rule of thumb for ICC(2) is .70, ICC(1) is rarely that large. Based on multiple survey articles on the subject (Bliese, 2000; Mathieu, Aguinis, Culpepper, & Chen, 2012; Scherbaum & Ferreter, 2009), a score of at least 0.25 is considered to be a strong ICC(1) value, and all of the ICC(1) values I report are higher than that. While the ICC(2) values may be slightly under the normal cutoff, I am confident that these ratings are high in reliability. For team performance ratings, I also report r_{WG} because the ratings are on a 7-pt. Likert scale. For individual contribution, the scale was a percentage from 0 to 100, and thus r_{WG} was not a feasible measure.

Trust propensity. I measured trust propensity with a survey composed of three questions from McKnight and Chervany (2005) and four questions from Kanawattanachai and Yoo (2002). I chose to use both measures because the first set dealt mainly with how a referent other feels, and the second set dealt primarily with the expected behavior of the referent other, and I wanted to capture both in the measure of trust propensity. An example of the questions used in this scale

Table 2. *Descriptive Statistics and Correlations*

	Variable	Mean	s.d.	1	2	3	4	5
1	Trust Propensity	3.19	0.66	1	-0.01	0.12*	0.17**	0.05
2	Demographic Similarity	0.61	0.32	0.11	1	0.18**	-0.02	-0.07
3	Swift Trust (T1)	3.62	0.55	0.31**	0.25*	1	0.27**	0.26**
4	Team Processes (T2)	3.82	0.65	0.27**	0.13	0.32**	1	0.38**
5	Performance Attribution (T3)	3.70	0.65	0.05	-0.01	0.07	0.37**	1
6	Team Cohesiveness (T3)	3.75	0.59	0.41**	0.19	0.35**	0.72**	0.41**
7	Trust (T3)	3.67	0.67	0.26**	0.39**	0.35**	0.56**	0.37**
8	Team Processes (T4)	3.87	0.66	0.33**	0.10	0.33**	0.68**	0.24*
9	Performance Attribution (T5)	3.77	0.60	0.08	-0.02	0.09	0.25*	0.24*
10	Team Cohesiveness (T5)	3.77	0.60	0.17	0.14	0.26*	0.51**	0.20
11	Trust (T5)	3.68	0.69	0.30**	0.23*	0.40**	0.38**	0.29**
12	Team Processes (T6)	3.86	0.69	0.34**	0.08	0.39**	0.60**	0.19
13	Performance Attribution (T7)	3.84	0.56	0.16	0.16	0.36**	0.13	0.25*
14	Team Cohesiveness (T7)	3.79	0.61	0.26*	0.20*	0.35**	0.54**	0.24*
15	Trust (T7)	3.73	0.67	0.29**	0.27**	0.49**	0.38**	0.26*
16	Team Processes (T8)	3.86	0.76	0.21*	0.29**	0.25*	0.53**	0.15
17	Performance Attribution (T9)	3.81	0.62	0.22*	0.40**	0.27**	0.35**	0.27**
18	Team Cohesiveness (T9)	3.73	0.67	0.30**	0.34**	0.32**	0.46**	0.12
19	Trust (T9)	3.76	0.74	0.25*	0.38**	0.35**	0.37**	0.26*
20	*Ability*	117.74	7.47	-0.07	0.36**	-0.02	-0.03	-0.02
21	*Attendance*	0.96	0.05	0.01	-0.21*	-0.15	-0.03	0.05
22	*Swift Trust Variance (T1)*	0.71	0.51	0.17	-0.09	0.11	0.10	0.06
23	*Team Performance (T2)*	5.18	1.29	-0.10	0.05	-0.13	-0.07	0.08
24	*Ind. Contribution Var. (T2)*	4.51	4.04	-0.18	-0.27**	-0.28**	-0.27*	-0.12
25	*Trust Variance (T3)*	0.89	0.57	-0.12	0.05	0.11	-0.04	-0.09
26	*Team Performance (T4)*	5.31	0.82	-0.05	0.06	-0.07	-0.04	0.01
27	*Ind. Contribution Var. (T4)*	4.34	3.30	-0.08	-0.17	-0.10	-0.37**	-0.27*
28	*Trust Variance (T5)*	1.06	0.62	-0.21*	-0.20*	-0.26*	-0.04	-0.04
29	*Team Performance (T6)*	5.72	0.79	-0.05	-0.14	-0.04	-0.11	-0.05
30	*Ind. Contribution Var. (T6)*	4.39	4.50	-0.10	-0.24*	-0.27**	-0.23*	-0.21*
31	*Trust Variance (T7)*	0.86	0.57	-0.05	-0.15	-0.08	-0.07	-0.04
32	*Team Performance (T8)*	5.45	0.84	-0.03	-0.05	-0.20	-0.08	-0.06
33	*Ind. Contribution Var. (T8)*	4.47	3.76	0.01	-0.09	-0.18	-0.16	-0.07

Notes. Variables in italics are team level (level-2) variables. Within-team correlations are shown above the diagonal; between-team correlations are shown below the diagonal, with within-team variables aggregated to the between-team level. Means and standard deviations are based on within-team values.

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

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Table 2 (cont'd)

	Variable	6	7	8	9	10	11	12
1	Trust Propensity	0.22**	0.17**	0.15**	0.05	0.18**	0.19**	0.20**
2	Demographic Similarity	0.05	0.17**	-0.03	0.01	-0.01	0.05	-0.03
3	Swift Trust (T1)	0.40**	0.51**	0.28**	0.22**	0.35**	0.44**	0.34**
4	Team Processes (T2)	0.57**	0.53**	0.66**	0.31**	0.53**	0.45**	0.68**
5	Performance Attribution (T3)	0.43**	0.42**	0.33**	0.36**	0.32**	0.33**	0.29**
6	Team Cohesiveness (T3)	1	0.57**	0.49**	0.27**	0.59**	0.43**	0.49**
7	Trust (T3)	0.70**	1	0.50**	0.31**	0.52**	0.72**	0.51**
8	Team Processes (T4)	0.55**	0.45**	1	0.35**	0.52**	0.53**	0.72**
9	Performance Attribution (T5)	0.25*	0.16	0.44**	1	0.44**	0.37**	0.35**
10	Team Cohesiveness (T5)	0.53**	0.47**	0.62**	0.54**	1	0.58**	0.57**
11	Trust (T5)	0.46**	0.65**	0.58**	0.39**	0.65**	1	0.50**
12	Team Processes (T6)	0.57**	0.45**	0.64**	0.39**	0.62**	0.51**	1
13	Performance Attribution (T7)	0.27**	0.25*	0.04	0.23*	0.18	0.31**	0.28**
14	Team Cohesiveness (T7)	0.63**	0.53**	0.50**	0.44**	0.70**	0.51**	0.78**
15	Trust (T7)	0.52**	0.71**	0.40**	0.27**	0.49**	0.71**	0.66**
16	Team Processes (T8)	0.57**	0.46**	0.51**	0.23*	0.51**	0.35**	0.70**
17	Performance Attribution (T9)	0.44**	0.48**	0.30**	0.35**	0.51**	0.36**	0.48**
18	Team Cohesiveness (T9)	0.63**	0.56**	0.47**	0.30**	0.63**	0.43**	0.64**
19	Trust (T9)	0.53**	0.65**	0.34**	0.19	0.47**	0.55**	0.52**
20	*Ability*	0.13	0.27**	0.11	0.20*	0.19	0.29**	0.15
21	*Attendance*	0.07	0.02	-0.01	0.11	0.16	0.15	0.12
22	*Swift Trust Variance (T1)*	0.04	0.01	-0.06	0.00	-0.10	-0.08	0.06
23	*Team Performance (T2)*	-0.14	-0.11	-0.02	0.12	0.02	-0.02	-0.08
24	*Ind. Contribution Var. (T2)*	-0.38**	-0.37**	-0.24*	-0.05	-0.19	-0.25*	-0.21
25	*Trust Variance (T3)*	-0.16	-0.10	0.08	-0.12	-0.08	-0.06	-0.07
26	*Team Performance (T4)*	-0.05	-0.20	0.10	0.30**	0.00	0.01	0.06
27	*Ind. Contribution Var. (T4)*	-0.34**	-0.36**	-0.45**	-0.22*	-0.40**	-0.41**	-0.38**
28	*Trust Variance (T5)*	-0.09	-0.14	-0.01	-0.04	-0.10	-0.14	-0.17
29	*Team Performance (T6)*	-0.05	-0.11	-0.13	0.00	-0.05	-0.10	-0.13
30	*Ind. Contribution Var. (T6)*	-0.32**	-0.35**	-0.32**	-0.02	-0.19	-0.30**	-0.39**
31	*Trust Variance (T7)*	-0.09	-0.16	-0.17	-0.10	-0.17	-0.18	-0.19
32	*Team Performance (T8)*	-0.03	-0.16	-0.07	0.12	0.00	-0.05	-0.06
33	*Ind. Contribution Var. (T8)*	-0.22*	-0.17	-0.15	0.02	-0.20	-0.11	-0.33**

Notes. Variables in italics are team level (level-2) variables. Within-team correlations are shown above the diagonal; between-team correlations are shown below the diagonal, with within-team variables aggregated to the between-team level. Means and standard deviations are based on within-team values.

* p < .05, ** p < .01

Table 2 (cont'd)

	Variable	13	14	15	16	17	18	19
1	Trust Propensity	0.08	0.20**	0.21**	0.12*	0.12*	0.22**	0.18**
2	Demographic Similarity	0.07	0.07	0.13**	0.11*	0.25**	0.17**	0.20**
3	Swift Trust (T1)	0.30**	0.37**	0.46**	0.21**	0.23**	0.28**	0.35**
4	Team Processes (T2)	0.24**	0.52**	0.43**	0.57**	0.35**	0.45**	0.37**
5	Performance Attribution (T3)	0.32**	0.33**	0.38**	0.23**	0.31**	0.25**	0.30**
6	Team Cohesiveness (T3)	0.26**	0.61**	0.43**	0.39**	0.38**	0.57**	0.38**
7	Trust (T3)	0.36**	0.52**	0.71**	0.44**	0.41**	0.51**	0.62**
8	Team Processes (T4)	0.26**	0.53**	0.45**	0.59**	0.35**	0.43**	0.37**
9	Performance Attribution (T5)	0.46**	0.43**	0.32**	0.29**	0.40**	0.33**	0.26**
10	Team Cohesiveness (T5)	0.34**	0.70**	0.49**	0.48**	0.43**	0.58**	0.43**
11	Trust (T5)	0.34**	0.52**	0.75**	0.41**	0.35**	0.47**	0.60**
12	Team Processes (T6)	0.37**	0.66**	0.56**	0.73**	0.44**	0.55**	0.48**
13	Performance Attribution (T7)	1	0.45**	0.46**	0.32**	0.51**	0.32**	0.35**
14	Team Cohesiveness (T7)	0.29**	1	0.60**	0.53**	0.50**	0.71**	0.48**
15	Trust (T7)	0.46**	0.68**	1	0.50**	0.49**	0.58**	0.74**
16	Team Processes (T8)	0.19	0.63**	0.50**	1	0.54**	0.65**	0.58**
17	Performance Attribution (T9)	0.41**	0.54**	0.51**	0.61**	1	0.63**	0.57**
18	Team Cohesiveness (T9)	0.18	0.77**	0.59**	0.79**	0.70**	1	0.69**
19	Trust (T9)	0.38**	0.57**	0.75**	0.65**	0.68**	0.71**	1
20	*Ability*	0.06	0.18	0.25*	0.12	0.16	0.18	0.19
21	*Attendance*	0.00	0.08	0.12	0.00	-0.12	0.00	0.00
22	*Swift Trust Variance (T1)*	-0.11	0.07	0.07	0.14	0.11	0.09	0.05
23	*Team Performance (T2)*	-0.15	-0.02	-0.13	-0.10	0.12	-0.08	-0.13
24	*Ind. Contribution Var. (T2)*	-0.09	-0.21*	-0.24*	-0.21*	-0.12	-0.27*	-0.19
25	*Trust Variance (T3)*	-0.03	-0.13	-0.12	0.01	-0.06	-0.04	-0.02
26	*Team Performance (T4)*	0.12	0.07	-0.03	0.02	0.12	0.04	-0.03
27	*Ind. Contribution Var. (T4)*	-0.06	-0.34**	-0.35**	-0.32**	-0.22*	-0.33**	-0.28**
28	*Trust Variance (T5)*	-0.17	-0.12	-0.24*	-0.14	-0.30**	-0.19	-0.19
29	*Team Performance (T6)*	0.15	-0.12	-0.04	-0.14	0.06	-0.15	-0.13
30	*Ind. Contribution Var. (T6)*	-0.03	-0.30**	-0.44**	-0.37**	-0.18	-0.35**	-0.39**
31	*Trust Variance (T7)*	-0.04	-0.06	-0.23*	-0.23*	-0.23*	-0.19	-0.31**
32	*Team Performance (T8)*	-0.03	-0.12	-0.17	0.05	0.01	-0.05	0.06
33	*Ind. Contribution Var. (T8)*	-0.02	-0.29**	-0.35**	-0.38**	-0.14	-0.32**	-0.39**

Notes. Variables in italics are team level (level-2) variables. Within-team correlations are shown above the diagonal; between-team correlations are shown below the diagonal, with within-team variables aggregated to the between-team level. Means and standard deviations are based on within-team values.
* $p < .05$, ** $p < .01$

Table 2 (cont'd)

	Variable	20	21	22	23	24	25	26
1	Trust Propensity							
2	Demographic Similarity							
3	Swift Trust (T1)							
4	Team Processes (T2)							
5	Performance Attribution (T3)							
6	Team Cohesiveness (T3)							
7	Trust (T3)							
8	Team Processes (T4)							
9	Performance Attribution (T5)							
10	Team Cohesiveness (T5)							
11	Trust (T5)							
12	Team Processes (T6)							
13	Performance Attribution (T7)							
14	Team Cohesiveness (T7)							
15	Trust (T7)							
16	Team Processes (T8)							
17	Performance Attribution (T9)							
18	Team Cohesiveness (T9)							
19	Trust (T9)							
20	*Ability*	1						
21	*Attendance*	0.23*	1					
22	*Swift Trust Variance (T1)*	-0.18	-0.24*	1				
23	*Team Performance (T2)*	0.25*	0.10	-0.05	1			
24	*Ind. Contribution Var. (T2)*	-0.22*	0.00	0.05	0.18	1		
25	*Trust Variance (T3)*	-0.23*	-0.28**	0.08	0.01	0.07	1	
26	*Team Performance (T4)*	0.18	-0.11	0.07	0.30**	0.07	0.16	1
27	*Ind. Contribution Var. (T4)*	-0.18	-0.19	0.04	-0.14	0.38**	0.29**	-0.17
28	*Trust Variance (T5)*	-0.24*	-0.01	0.03	-0.13	0.29**	0.20	-0.02
29	*Team Performance (T6)*	-0.05	-0.11	-0.04	0.31**	0.18	0.03	0.29**
30	*Ind. Contribution Var. (T6)*	-0.25*	0.02	0.13	-0.07	0.29**	0.12	0.10
31	*Trust Variance (T7)*	-0.21*	-0.20*	0.13	-0.12	0.03	0.17	-0.03
32	*Team Performance (T8)*	-0.09	0.06	0.04	0.28**	0.11	0.14	0.24*
33	*Ind. Contribution Var. (T8)*	-0.05	-0.01	0.12	0.03	0.36**	0.10	0.02

Notes. Variables in italics are team level (level-2) variables. Within-team correlations are shown above the diagonal; between-team correlations are shown below the diagonal, with within-team variables aggregated to the between-team level. Means and standard deviations are based on within-team values.

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

Table 2 (cont'd)

	Variable	27	28	29	30	31	32	33
1	Trust Propensity							
2	Demographic Similarity							
3	Swift Trust (T1)							
4	Team Processes (T2)							
5	Performance Attribution (T3)							
6	Team Cohesiveness (T3)							
7	Trust (T3)							
8	Team Processes (T4)							
9	Performance Attribution (T5)							
10	Team Cohesiveness (T5)							
11	Trust (T5)							
12	Team Processes (T6)							
13	Performance Attribution (T7)							
14	Team Cohesiveness (T7)							
15	Trust (T7)							
16	Team Processes (T8)							
17	Performance Attribution (T9)							
18	Team Cohesiveness (T9)							
19	Trust (T9)							
20	*Ability*							
21	*Attendance*							
22	*Swift Trust Variance (T1)*							
23	*Team Performance (T2)*							
24	*Ind. Contribution Var. (T2)*							
25	*Trust Variance (T3)*							
26	*Team Performance (T4)*							
27	*Ind. Contribution Var. (T4)*	1						
28	*Trust Variance (T5)*	0.17	1					
29	*Team Performance (T6)*	-0.07	0.11	1				
30	*Ind. Contribution Var. (T6)*	0.40**	0.21*	0.21	1			
31	*Trust Variance (T7)*	0.09	0.28**	0.06	0.32**	1		
32	*Team Performance (T8)*	-0.12	0.09	0.33**	0.04	0.12	1	
33	*Ind. Contribution Var. (T8)*	0.36**	0.12	0.10	0.60**	0.04	-0.08	1

Notes. Variables in italics are team level (level-2) variables. Within-team correlations are shown above the diagonal; between-team correlations are shown below the diagonal, with within-team variables aggregated to the between-team level. Means and standard deviations are based on within-team values.

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

Table 3. *Fit Statistics for Survey Variables*

Variable	Chi-Square	RMSEA	CFI	SRMR
Trust Propensity	4.46	0.06	0.99	0.02
Trust	532.24	0.16	0.93	0.05
Attribution	42.20	0.11	0.98	0.03
Team Cohesiveness	19.20	0.06	1.00	0.01
Team Processes	179.25	0.07	0.98	0.02

is "Most people can be counted on to do what they say they will do." CFA results showed that the two measures loaded on separate constructs, and the Kanawattanachai and Yoo (2002) items had stronger factor loadings and better fit statistics, so only those items were used for the measure of trust propensity. The trust propensity measure had a Cronbach's alpha of 0.74.

Demographic Similarity. To create a measure of demographic similarity, I surveyed all team members and asked them for the nation which they consider to be their home country. I then calculated a percentage for each individual of the other team members on their team with whom they share a home country. This percentage will then be used to indicate the demographic similarity of the team for that individual. The percentages of demographic similarity varied among participants, with 11% of participants having no similarity to their team, and 24% being 100% similar to their team. I chose home country as the reference because it provides a solid proxy for the cultural background of the student, and should also be a salient characteristic to the team members.

Trust. Trust was measured using cognition-based trust items from two different sources. The first set of four items was taken from Kanawattanachai and Yoo (2002), and dealt primarily with impressions of ability, such as "I see no reason to doubt my teammates' competence and preparation for the job." The second set of four items was taken from Mayer, et al. (1995) and dealt with willingness to be vulnerable to the team, such as "I would be comfortable giving the

other team members complete responsibility for the completion of this project." The same 8 items were used to measure swift trust and long-term trust, simply differing in when the two constructs were measured. After the CFA, two items (one from each scale) were dropped due to having factor loadings below 0.4, yielding a measure with 6 items and a Cronbach's alpha of 0.89.

Swift trust was measured individually after the teams had first met for approximately 90 minutes, and used on an individual basis in regression equations for Hypothesis 1. Then, before being used for Hypotheses 2 and 3, swift trust was aggregated to the team level via taking a simple mean for the team. This aggregation was necessary as the DV in question for those equations was at the team level, and thus all variance for those equations would also be at the group level. All measures of subsequent trust were used at the individual level.

Ability. The ability of the participants was measured via 3 exams over the course of the semester. These exams cover the same material which the teams will use to formulate policies in their case questions, but are taken at the individual level. To determine the ability of each participant, the mean of the three exams was taken so as to reduce variation in exam scores due to factors other than ability. Because success on the exam material should translate directly to success on the team performance measure, this measure of ability should be less distal than other measures such as general mental ability. The three exam grades had a test-retest Cronbach's alpha of 0.77, indicating reasonable reliability.

Attendance. Attendance was taken at all recitation section meetings, where teams are given time in class to work together on the project and ask questions of the instructor. These recitations provide the primary opportunity for the team to work together on the project, and it is therefore very important that team members attend each recitation session so that they can have

an equal part in the completion of the case questions. Missing a recitation section would thus mean that the team member was unavailable to work in that performance episode with his or her team, as he or she would be unavailable during a time when the rest of the team is actively working on project material. To obtain a measure of attendance, the percentage of recitation sections attended was calculated for each participant. The percentages of recitations attended ranged from 60% to 100% for my sample, with 74% of the participants present for every recitation.

Team Performance. After the semester was complete, I removed all identifying information from all team assignments, and had each assignment rated independently by a set of four raters. Raters were blind to the hypotheses of this study, and rated each assignment on a 7-pt. Likert scale, with 7 being "excellent" and 1 being "terrible". A sample of the grading guide points the raters were given, along with the grading scale that they used, is included in Appendix B. Averaged across all assignments, the ratings of team performance had an ICC(1) of 0.31, an ICC(2) of 0.66, and an r_{WG} of 0.72. As mentioned earlier in this section, the lower numbers for ICC(2) and r_{WG} may be a concern, but the ICC(1) is well within the acceptable range for use as a reliable measure.

Trust Variance. Once ratings of trust had been created for each team member, a rating for the variance of the trust across members of the same team could then be calculated. Before doing this, I first verified that enough of the variance in trust was within-team to justify using a variance measure in the first place. If a measure has very little within-team variance, then using the dispersion of that measure as a variable makes little sense. As you can see in Table 4, the percent of within-team variance for trust is quite high, indicating that using the variance of trust within the team in calculations is warranted.

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Based on the recommendations in Roberson, Sturman, and Simons (2007), I used the standard deviation as my measure of trust variance. Given that I am attempting to measure the agreement (or disagreement) among the members of the team in level of trust, standard deviation makes the most sense to use in this case, and has also been used as the measure of dispersion in several published papers studying variance as a variable (Ferguson & Peterson, 2015; Fleeson, 2001; Scott, et al., 2012).

Team Processes. Team processes were measured using a scale developed by Mathieu, Maynard, Taylor, Gilson, and Ruddy (2007), which was later adapted for use by Lee, Koopman, Hollenbeck, Wang, and Lanaj (2015). The scale requires team members to rate their team on the skill they have shown in ten team process categories. The CFA found that two of the categories, team monitoring and backup behavior, and coordination activities, did not load on the same factor as the other 8 categories. This could be because the performance event required of the teams in the sample was relatively straightforward, requiring pooled interdependence in order for the team to complete it. These two questions were dropped, resulting in an 8-item measure with a Cronbach's alpha of 0.92.

Table 4: *Within- and Between-Team Variance for Trust and Individual Contribution*

Variable	Within-Team Variance	Between-Team Variance	Total Variance	Percent of Variance Within-Team
Swift Trust (T1)	0.29	0.01	0.30	96.4%
Trust (T3)	0.28	0.01	0.28	98.2%
Trust (T5)	0.38	0.07	0.45	85.1%
Trust (T7)	0.30	0.05	0.34	86.9%
Trust (T9)	0.38	0.04	0.42	90.0%
Individual Contribution (T3)	35.37	0.40	35.77	98.9%
Individual Contribution (T5)	29.06	0.21	29.27	99.3%
Individual Contribution (T7)	32.06	0.03	32.09	99.9%
Individual Contribution (T9)	29.55	0.03	29.58	99.9%

Performance Attribution. While attribution of performance ratings has been studied in depth in the organizational literature, the scales used to obtain these beliefs are very specific to the particular system in which the participant works. As such, I created a five-item scale that specifically dealt with the level of internal attribution for performance that team members had for the case questions assignment (Weiner, 1985). "The grade that my team received on the last case question assignment was due to my team's ability at answering case questions," is an example of one of the items in this scale. Four of the five items that specifically dealt with internal attribution loaded on a single factor, while the four items designed to cover external attribution did not converge to a factor. Because my theoretical argument is primarily concerned with internal attribution of the team's performance, I used the 4-item internal attribution scale, which is the one reported on in Table 3. The performance attribution measure had an ICC(1) of 0.35, and ICC(2) of 0.70, and an r_{WG} of 0.86.

Team Cohesiveness. Individual perceptions of the team's level of cohesiveness were measured using a four-item scale adapted from Oreilly and Caldwell (1985), with items such as "The members of this team stick together." This scale was chosen because it emphasized the social nature of team cohesiveness, which matches closely with the theoretical argument used for its inclusion in this dissertation. All items loaded on a single factor with high factor loading scores in the CFA, so all four were used. The ICC(1) for the team cohesiveness measure was 0.34, the ICC(2) was 0.70, and the r_{WG} was 0.89.

Individual Contribution Variance. During the surveys at T3, T5, T7, and T9, each team member was asked to provide a percentage of the work for that performance event which was completed by each individual member of the team. So, in a team with 5 members, each individual team member will assign 5 percentages, one to each team member, which indicate

how much that team member contributed to the assignment,. These five percentages must add to 100, and each team member must be given an integer percentage between 0 and 100, inclusive. The result of this process is that each team member is rated by a set of raters on their individual contribution to the team performance episode. Averaged across all ratings, individual contribution had an ICC(1) of 0.30, an ICC(2) of 0.64, indicating reasonable agreement between raters. The ratings were then averaged to produce a single individual contribution score. To get the individual contribution variance for the team, I took the standard deviation of the different team members' individual contribution scores. As with trust, above, I first verified that there was sufficient within-team variance in individual contribution (see Table 4).

Control Variables. To separate team trust from impressions of team potency, I initially chose to use team potency as a control variable for all equations which featured trust. However, team potency was not correlated either with trust or with team performance, and thus was not useful as a control variable.

In any equation with trust (or team performance) as the DV, the prior level of trust in the team (or team performance) is entered as a control variable. This is done so that the results will reflect a change in trust (or performance) level.

RESULTS

Analyses

For Hypothesis 1 and 5, hierarchical OLS regression in SPSS was used on individual-level variables. For Hypotheses 2, 3, and 4, all variables were aggregated to the team level and then regressed using hierarchical multiple regression in SPSS. All variables were first grand mean centered before any interaction terms were created. By doing this, the standard deviation of these variables was unchanged, but multicollinearity due to normal interaction term multiplication was reduced. For Hypotheses 7 and 8, all variables except for team performance and individual contribution variance were used at the individual level, and multilevel modeling via MPlus was used. Team performance was grand mean centered and all other variables were group mean centered before interaction terms were created. For Hypothesis 9, a term was created for "change in trust" from one time period to another, which was then examined using t-tests to determine if the change in trust for each time period was significantly different from 0. In addition, a latent growth model was created in MPlus and fit to the pattern of trust over time (see Figure 8 for a plot of the curves).

Antecedents of Swift Trust

Hypothesis 1 serves as a replication of the existing literature on swift trust, predicting that trust propensity and demographic similarity serve as proxies for ability, integrity, and benevolence when team members are deciding whether to trust one another during their initial meeting. The regressions results for Hypothesis 1 are shown in Table 5. Trust propensity and demographic similarity are all individually significantly related to swift trust, as well as significantly related when they are entered simultaneously. This is consistent with the theoretical proposals made by McKnight, et al. (1998), and has been confirmed in past studies of trust in

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Table 5. *Regression Results for Antecedents of Swift Trust*

Variable	Coeff.	Sig.	Adj. R^2
Individually:			
Trust Propensity	0.09	0.02	0.01
Demographic Similarity	0.34	0.00	0.04
Together:			0.05
Intercept	3.12	0.00	
Trust Propensity	0.09	0.02	
Demographic Similarity	0.34	0.00	

Notes. All variables are at the individual (level-1) level. n = 407.
DV is Swift Trust.

newly formed groups. As these two antecedents of swift trust were collected one week before swift trust, they do display temporal precedence and indicate that these factors predict swift trust in the team. Based on these equations, Hypotheses 1a and 1b seem to be supported.

Swift Trust and Performance

Hierarchical regression was used to determine the effect that swift trust has on team performance in the initial performance episode, and the results of this regression are displayed in Table 6. Unfortunately, neither moderation hypothesis is supported, with interaction terms failing to reach significance level. There does appear to be a main effect for ability on team performance, which makes logical sense. Unlike ability, attendance does not have a significant relationship with team performance, either as a main effect or interacting with swift trust. The lack of a main effect does seem counter to expectations for team performance, as team member absenteeism should have an effect on the performance of the team. However, the nature of the team performance task in this study, which is generally accomplished through pooled interdependence, and occurs over a relatively contiguous and short period of time, could shed some light on why the attendance measure would be unlikely to influence team performance in a

significant way. I talk about this further in the discussion section. All in all, Hypotheses 2 and 3 are not supported.

Table 6: *Hierarchical Regression for Swift Trust and Team Performance*

	Variable	Step 1	Coeff. Step 2	Step 3
	Intercept	5.31**	5.30**	5.31**
1	Swift Trust	-0.41†	-0.59**	-0.61**
2	Ability		0.03**	0.03*
	Attendance		-3.18†	-2.93
3	Swift Trust X Ability			-0.01
	Swift Trust X Attendance			-1.27
	ΔR^2	0.04†	0.09*	0.00

Notes: DV is Team Performance (T2). All variables are at the team level and have been grand mean centered. N = 96.
† $p < .10$ * $p < .05$ ** $p < .01$

In order to completely cover the relationship between trust and performance, I also ran regressions for trust predicting performance (with moderators) for each performance episode of the team project. The results were all similar to those shown here except for team performance at T4, which was predicted by Trust measured at T3. I discuss this particular relationship further in supplemental analysis and the discussion section.

Variance in Trust Predicting Team Performance

Contrary to much of the current literature on trust variance in teams, I predicted in Hypothesis 4 that variance in trust would result in increased subsequent team performance. The results of the hierarchical regressions for this hypothesis are included in Table 7. For this hypothesis, I examined the effect of trust variance on team performance for each performance episode during the study. While the results do not support the proposed positive relationship, they also do not support the negative relationship proposed in the few articles yet to study variance in trust between team members. This relationship is likely worthy of future study, as it

Table 7. *Regression Results for Trust Variance and Team Performance*

	Variable	Step 1	Coeff. Step 2	Step 3
	DV: Team Performance (T2)			
	Intercept	5.19**	5.19**	
1	Swift Trust Mean	-0.63	-0.65	
2	Swift Trust Variance		0.15	
	DV: Team Performance (T4)			
	Intercept	4.22**	4.24**	4.24**
1	Team Performance (T2)	0.21**	0.20**	0.20**
2	Trust Mean (T3)		-0.38†	-0.38†
3	Trust Variance (T3)			0.04
	DV: Team Performance (T6)			
	Intercept	4.31**	4.30**	4.32**
1	Team Performance (T4)	0.26**	0.27**	0.26**
2	Trust Mean (T5)		-0.17	-0.19
3	Trust Variance (T5)			-0.09
	DV: Team Performance (T8)			
	Intercept	3.45**	3.48**	3.46**
1	Team Performance (T6)	0.35**	0.34**	0.35**
2	Trust Mean (T7)		-0.28	-0.31
3	Trust Variance (T7)			-0.13

Notes. All variables are at the team level. $n = 96$.

† $p < .10$ * $p < .05$ ** $p < .01$

appears just as contentious as the relationship between mean trust scores and performance. The

impact of trust on performance is more complex than scholars thus far anticipated.

Trust Predicting Team Processes

Table 8 presents the results of hierarchical regressions for the relationship between trust

and the effectiveness of team processes. Hypothesis 5 predicted that trust in the team will have a

positive effect on subsequent team process effectiveness, and this proved true for each

performance episode of the study. Controlling for previous team process effectiveness, trust

significantly predicted subsequent effectiveness of team processes in every case. This makes

Table 8: *Regression Results for Trust and Team Processes*

		Coeff.	
	Variable	**Step 1**	**Step 2**
	DV: Team Processes (T3) (n=417)		
	Intercept	2.67**	
1	Swift Trust (T1)	0.32**	
	ΔR^2	0.07	
	DV: Team Processes (T5) (n=392)		
	Intercept	1.31**	0.94**
1	Team Processes (T3)	0.67**	0.54**
2	Trust (T3)		0.23**
	ΔR^2	0.43	0.04
	DV: Team Processes (T7) (n=394)		
	Intercept	0.93**	0.73**
1	Team Processes (T5)	0.76**	0.68**
2	Trust (T5)		0.14**
	ΔR^2	0.53	0.01
	DV: Team Processes (T9) (n=403)		
	Intercept	0.76**	0.57**
1	Team Processes (T7)	0.81**	0.73**
2	Trust (T7)		0.15**
	ΔR^2	0.55	0.01

Notes. All variables are at the individual level.
$\dagger$ p < .10   * p < .05   ** p < .01

sense, and supports the accepted belief that trust is essential for proper team interdependence by making teamwork possible. Based on this, Hypothesis 5 is supported.

Performance and Subsequent Trust

Results of the multilevel regression used to test Hypotheses 6 and 7 are included in Table 9. Hypothesis 6 proposed that teams will use team performance as a cue to their development of subsequent trust in the team, and thus that trust will be predicted by ratings of the previous team performance episode. The data, however, shows no significant relationship between team

Table 9: *Multilevel Regression for Team Performance and Trust*

	Variable	Level	Step 1	Step 2	Step 3	Step 4
	DV: Trust (T3) (Level-1 n=414, Level-2 n=96)	1				
	Intercept		3.65**	3.65**	3.66**	3.66**
1	Swift Trust (T1)	1	0.64**	0.64**	0.45**	0.45**
2	Team Performance (T2)	2		-0.05	-0.05	-0.05
3	Performance Attribution (T3)	1			0.21**	0.21**
	Team Cohesiveness (T3)	1			0.31**	0.31**
4	Perf. X Attribution					0.00
	Perf. X Cohesiveness					0.01
	DV: Trust (T5) (Level-1 n=375, Level-2 n=94)	1				
	Intercept		3.67**	3.65**	3.64**	3.65**
1	Trust (T3)	1	0.74**	0.75**	0.62**	0.62**
2	Team Performance (T4)	2		0.01	0.01	0.01
3	Performance Attribution (T5)	1			0.08	0.06
	Team Cohesiveness (T5)	1			0.23**	0.24**
4	Perf. X Attribution					-0.03
	Perf. X Cohesiveness					0.10†
	DV: Trust (T7) (Level-1 n=372, Level-2 n=92)	1				
	Intercept		3.75**	3.74**	3.74**	3.74**
1	Trust (T5)	1	0.77**	0.76**	0.62**	0.62**
2	Team Performance (T6)	2		-0.05	-0.05	-0.05
3	Performance Attribution (T7)	1			0.13**	0.14**
	Team Cohesiveness (T7)	1			0.26**	0.26**
4	Perf. X Attribution					-0.12
	Perf. X Cohesiveness					0.03
	DV: Trust (T9) (Level-1 n=373, Level-2 n=91)	1				
	Intercept		3.76**	3.75**	3.74**	3.74**
1	Trust (T7)	1	0.69**	0.71**	0.51**	0.51**
2	Team Performance (T8)	2		0.04	0.04	0.05
3	Performance Attribution (T9)	1			0.13*	0.13*
	Team Cohesiveness (T9)	1			0.33**	0.34**
4	Perf. X Attribution					-0.04
	Perf. X Cohesiveness					0.03

Notes: Team performance is grand mean centered. All other variables are group mean centered.

$†\ p < .10$ $*\ p < .05$ $**\ p < .01$

performance and subsequent trust in the team (controlling for previous trust in the team). This result, along with the very large percentage of within-team variance for trust in the team, would indicate that members of the team have far more individualized perceptions of how much trust to place in their peers, and that their performance results are not likely to sway these personal beliefs. While this finding does point to a complex understanding of trust which could be subject to cognitive and social biases (which is the main argument of this dissertation), it results in a lack of support for Hypothesis 6.

Hypothesis 7a proposes that the attribution for the performance ratings of the team would moderate the effect of team performance on subsequent trust. I studied this relationship for each performance episode over the course of the study, and found that the interaction term was not significant in predicting trust in the team. As a general rule, the performance attribution of the team was significantly correlated with trust in the team, but given that both constructs were collected with survey measures at the same time, this could be entirely due to common method bias. I will examine this main effect with a lagged model in the supplemental analysis. Hypothesis 7a is not supported by my results.

Similarly, team cohesiveness is correlated closely with team trust, but the interaction term of team performance multiplied by team cohesiveness has no significant effect (with the exception of one marginal result for trust at T5), meaning that Hypothesis 7b is not supported. Again, the measures for team cohesiveness and trust were taken at the same time, so the main effect and the marginal interaction effect may be overstated due to common method bias. As with performance attribution, I will examine a time-lagged model of team cohesiveness predicting subsequent trust in the supplemental analyses.

Variance in Individual Contribution and Trust

Table 10 shows the results of multilevel regressions of the effect of variance in individual contribution on subsequent trust in the team. Hypothesis 8 proposed that high variance in individual contribution to the project would result in low subsequent trust in the team (a negative relationship). For each performance episode, the negative relationship between individual contribution variance and trust was statistically significant. This indicates that team members

Table 10: *Multilevel Regression for Ind. Contribution Variance and Trust*

	Variable	Level	Step 1	Step 2	Step 3
	DV: Trust (T3) (Level-1 n=397, Level-2 n=90)	1			
	Intercept		3.65**	3.66**	3.66**
1	Swift Trust (T1)	1	0.64**	0.64**	0.64**
2	Ind. Contribution Mean (T3)	2		-0.01	0.00
3	Ind. Contribution Variance (T3)	2			-0.04**
	DV: Trust (T5) (Level-1 n=364, Level-2 n=89)	1			
	Intercept		3.66**	3.66**	3.67**
1	Trust (T3)	1	0.74**	0.73**	0.73**
2	Ind. Contribution Mean (T5)	2		-0.01	-0.01
3	Ind. Contribution Variance (T5)	2			-0.05**
	DV: Trust (T7) (Level-1 n=374, Level-2 n=91)	1			
	Intercept		3.75**	3.75**	3.75**
1	Trust (T5)	1	0.77**	0.78**	0.77**
2	Ind. Contribution Mean (T7)	2		-0.02	-0.00
3	Ind. Contribution Variance (T7)	2			-0.04**
	DV: Trust (T9) (Level-1 n=382, Level-2 n=92)	1			
	Intercept		3.76**	3.77**	3.77**
1	Trust (T7)	1	0.69**	0.70**	0.70**
2	Ind. Contribution Mean (T9)	2		0.05	0.05*
3	Ind. Contribution Variance (T9)	2			-0.05**

Notes: Ind. Contribution Variance is grand mean centered. All other variables
are group mean centered.
$\dagger$ p < .10 * p < .05 ** p < .01

evaluate their trust in the team based on how equally the team divides their effort toward task completion, which supports the contention that social loafing would reduce the trust that members would have in their team.

It is important to note that the survey data for individual contribution was collected at the same time as the DV measure for trust. However, each team member's individual contribution was rated both by himself and by each of the other members of his team, resulting in multiple ratings of contribution. This, as well as the aggregation to the team level by taking a standard deviation, should prevent any possible common method bias from causing an inflated correlation between this measure and trust. Based on these results, Hypothesis 8 is supported.

Trust Dynamics Over Time

Trust patterns over time were proposed in Hypotheses 9a and 9b. Hypothesis 9a predicted that change in trust over time would be positive until the midpoint of the team tenure (in this case, trust at time period T5), and then be negative immediately afterward. Hypothesis 9b predicted that, after this midpoint drop, change in trust over time would be consistently positive. To test these predictions, I created a set of difference scores for change in trust (so, for "Change in Trust (T1-T3)", I subtracted trust at T1 from trust at T3 for all participants). I then used t-tests to determine if the change in trust measures were significantly different from 0. The results of the t-tests are shown in Table 11.

Table 11: *T-Test Results for Change in Trust*

Variable	n	Mean	s.d.	t	Sig.
Change in Trust (T1-T3)	414	0.05	0.61	1.57	0.12
Change in Trust (T3-T5)	383	-0.01	0.48	-0.21	0.83
Change in Trust (T5-T7)	384	0.08	0.46	3.24	0.00
Change in Trust (T7-T9)	397	0.03	0.53	1.32	0.19

As the change in trust from T1 to T3 and from T3 to T5 are both not significantly different from 0, the pattern described in Hypothesis 9a is not supported by the data. It appears that team members are not displaying a pattern of trust over time which would be consistent with punctuated equilibrium. In fact, at no time during team tenure does the level of trust appear to be significantly negative, indicating a correction of an artificially inflated trust perception. Based on this, Hypothesis 9a is not supported. While trust does grow significantly between T5 and T7, the change in trust from T7 to T9 does not significantly differ from 0. Based on this, Hypothesis 9b is also not supported, as it predicted a growth of trust for each time period from the midpoint of team tenure onward.

Figure 8: *Trust Over Time*
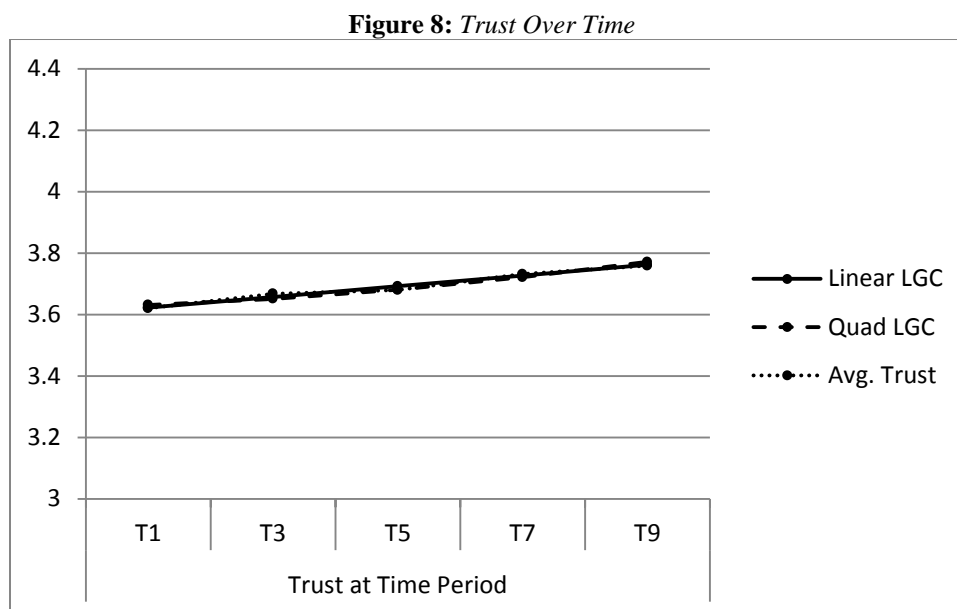
To get a better picture of the patterns of trust over time, I plotted the average trust level for all teams, as well as both linear and quadratic latent growth models, in Figure 8. As indicated by the plot and the linear latent growth curve, trust in the team had a small positive trend over time, but did not change significantly from positive to negative slope at different time periods. In fact, the aggregate trust in the team over time for the entire sample appears to be relatively stable over time.

I ran both a linear and a quadratic latent growth curve for trust over time in hopes of determining if the pattern of trust indicated a significant U-shaped curve, but with an overall increasing trend. The results for the slope tests of the latent growth curves are shown in Table 12. While the linear model did show a significant positive slope, the quadratic equation did not

Table 12: *Latent Growth Curve Results for Trust*

Variable	Coeff.	Sig.
Linear LGC Model		
Intercept	3.62	0.00
Slope	0.03	0.00
Quadratic LGC Model		
Intercept	3.63	0.00
Linear Slope	0.02	0.61
Quadratic Slope	0.00	0.57

have a significant linear or quadratic slope term, indicating that the drop in trust during the mid-point of team tenure is not significant. These results strongly indicate that Hypothesis 9a is not supported. Similarly, while the overall slope of the linear latent growth curve is moderately significant, a curve featuring only trust at T5, T7, and T9 did not have a significant slope, which indicates that Hypothesis 9b is also not supported. I examine trust over time more thoroughly in the supplemental analyses by looking at how these trajectories differ for teams with high performance overall vs. teams with low performance overall.

Supplemental Analyses

Trust after the initial performance episode. While the results for Hypotheses 2 and 3 are disappointing, there was one particular time period which showed a significant relationship between trust and subsequent performance. Trust surveyed following the initial performance episode (T3) was significantly negatively related to team performance during the second performance episode (see the results of the relevant regression in Table 13). This indicates that

teams who maintained a relatively high level of trust in one another, even after having an

opportunity to observe one another performing team tasks, did worse on the next performance

Table 13: *Hierarchical Regression for Trust (T3) and Team Performance*

	Variable	Coeff.			
		Step 1	Step 2	Step 3	Step 4
	Intercept	5.30**	5.30**	5.30**	5.30**
1	Past Performance (T2)	0.21**	0.20**	0.18*	0.18*
2	Trust (T3)		-0.39†	-0.53*	-0.54*
3	Ability			0.03*	0.03*
	Attendance			-3.45†	-3.24†
4	Trust X Ability				-0.01
	Trust X Attendance				-0.66
	ΔR^2	0.09**	0.04†	0.07*	0.00

Notes: DV is Team Performance (T4). All variables are at the team level and have been grand mean
centered. N = 96.
† $p < .10$ * $p < .05$ ** $p < .01$

episode together. In other words, this relationship indicates that it is important for teams to

maintain a moderate level of trust in one another early in team tenure. This level of caution

about trusting the rest of the team provides higher team performance immediately, and also

appears to lead to higher team performance overall (see the section on predictors of overall team

performance later in these supplemental analyses).

　　　Team processes as mediator between trust and performance. The results for Hypothesis

5 indicate that trust has a significant positive impact on the effectiveness of team processes in

future performance episodes. Given the well-studied impact of team processes on performance,

it is possible that the relationship between trust and performance is mediated by team processes.

Unfortunately, all relationships between team processes and performance during the same

episode were non-significant. This is troubling, as team processes should generally dovetail with

the performance of the team on tasks. Due to the pooled interdependence required to complete

the project in this study, it is possible that teams simply do not rely heavily on team processes to

complete their tasks. It is particularly interesting that the two portions of team processes which

did not load on a single factor happened to be backing up behaviors and team coordination, both

of which are less likely during pooled interdependence. In any case, team processes did not

mediate the relationship between trust and team performance.

Performance attribution and team cohesiveness lagged for subsequent trust. While the

finding for the moderation proposed in Hypotheses 7a and 7b were not supported, there did

Table 14: *Hierarchical Regression for Antecedents of Trust*

	Variable	Step 1	Step 2
		Coeff.	
	Intercept	3.68**	3.68**
1	Trust (T3)	0.74**	0.69**
2	Performance Attribution (T3)		0.08
	Team Cohesiveness (T3)		0.03
	ΔR^2	0.35**	0.00

Notes: DV is Trust (T5). All variables are at the individual level
and have been group mean centered. N = 392.
† $p < .10$ * $p < .05$ ** $p < .01$

appear to be a strong main effect for performance attribution and team cohesiveness on trust.

However, due to the threat of common method bias, I could not be sure that the relationship was

not a product of the study design. To test this, I created regression equations which tested the

relationship that performance attribution and team cohesiveness had on trust in a later time

period. The results of the first such regression equation are displayed in Table 14, but all

regressions show non-significant results for performance attribution and team cohesiveness in

predicting subsequent trust in the team (controlling for past trust in the team). It appears that all

main effect results for these constructs were the result of common method bias.

Change in trust and performance. After creating the terms for change in trust over time

(used for Hypothesis 9), I examined if those terms significantly predicted performance at any

stage of team tenure. Much like the results for trust on performance, change in trust does not

predict performance at any period other than T4 (the relationship between trust and performance

is described in Table 13, above). This makes sense, as all equations with trust as a predictor also

controlled for previous levels of trust, meaning that they were already indicating the effects of a

change in trust. I likewise attempted to find a relationship between team performance and

subsequent change in trust, but those regressions also provided no significant relationships.

Table 15: *Multilevel Regression for Trust and Team Performance (With Interaction)*

	Variable	Step 1	Step 2	Step 3
	DV: Team Performance (T4) (n=94)			
	Intercept	5.30**	5.30**	5.30**
1	Past Performance (T2)	0.19*	0.17*	0.15*
	Ability	0.01	0.02†	0.02†
2	Trust (T3)		-0.51*	-0.48*
3	Trust X Ability			-0.01
	Trust X Past Performance			-0.34†
	Δ R^2	0.10**	0.06*	0.04
	DV: Team Performance (T6) (n=93)			
	Intercept	5.71**	5.71**	5.73**
1	Past Performance (T4)	0.28**	0.28**	0.27**
	Ability	-0.01	-0.01	-0.01
2	Trust (T5)		-0.15	-0.16
3	Trust X Ability			-0.02
	Trust X Past Performance			-0.07
	Δ R^2	0.09*	0.01	0.01
	DV: Team Performance (T8) (n=91)			
	Intercept	5.45**	5.45**	5.42**
1	Past Performance (T6)	0.35**	0.34**	0.40**
	Ability	-0.01	-0.01	0.00
2	Trust (T7)		-0.31	-0.44†
3	Trust X Ability			0.04
	Trust X Past Performance			0.60*
	Δ R^2	0.11**	0.02	0.05†

Notes: All variables are at the team level and grand mean centered.
    † $p < .10$ * $p < .05$ ** $p < .01$

The interactive effect of past performance and trust. In an attempt to understand if trust moderates the relationship between past performance and current performance, I examined the interactive effect of trust and past performance on team performance in each time period. Initially, I replaced attendance with past performance in the equations used for Hypotheses 2 and 3. The results for this set of equations are shown in Table 15. The results indicate that trust and past performance interact to predict subsequent performance early in team tenure (T4) and late in team tenure (T8). The main effect of ability and the interactive effect of ability and trust on subsequent performance are not generally significant in these equations, indicating that a more parsimonious regression could be created. I thus dropped all of the terms for ability and ran the

Table 16: *Multilevel Regression for Trust and Team Performance (With Interaction)*

	Variable	Step 1	Step 2	Step 3
	DV: Team Performance (T4) (n=94)			
	Intercept	5.30**	5.30**	5.30**
1	Past Performance (T2)	0.21**	0.20**	0.18**
2	Trust (T3)		-0.39†	-0.36†
3	Trust X Past Performance			-0.37*
	ΔR^2	0.09**	0.04†	0.04*
	DV: Team Performance (T6) (n=93)			
	Intercept	5.71**	5.71**	5.71**
1	Past Performance (T4)	0.27**	0.27**	0.26**
2	Trust (T5)		-0.20	-0.21
3	Trust X Past Performance			-0.11
	ΔR^2	0.08**	0.01	0.00
	DV: Team Performance (T8) (n=91)			
	Intercept	5.45**	5.45**	5.45**
1	Past Performance (T6)	0.35**	0.34**	0.38**
2	Trust (T7)		-0.33	-0.37†
3	Trust X Past Performance			0.52†
	ΔR^2	0.11**	0.03	0.04†

Notes: All variables are at the team level and grand mean centered.
   † $p < .10$ * $p < .05$ ** $p < .01$

regressions again, as shown in Table 16. Again, the interaction terms for past performance and

trust are at least marginally significant at predicting performance at T4 and T8.

These results are interesting, as they indicate that trust may have a more nuanced effect

on performance than I hypothesized. Instead of providing a main effect (with possible

moderators), it appears that trust may moderate the effect of past performance on performance in

the future. To attempt to determine the direction of these relationships, I created interaction

plots, shown here in Figure 9 (early in team tenure) and Figure 10 (late in team tenure).

Slope tests indicate that the line for low trust has a significant positive slope ($p < .01$),

while the line for high trust has a slope which is not significantly different from zero.   The large

gap between the endpoints for high past performance are more interesting, indicating that, for

teams who did well on the first performance episode, a low level of team trust results in

**Figure 9:** *Trust and Performance Interaction (Early)*
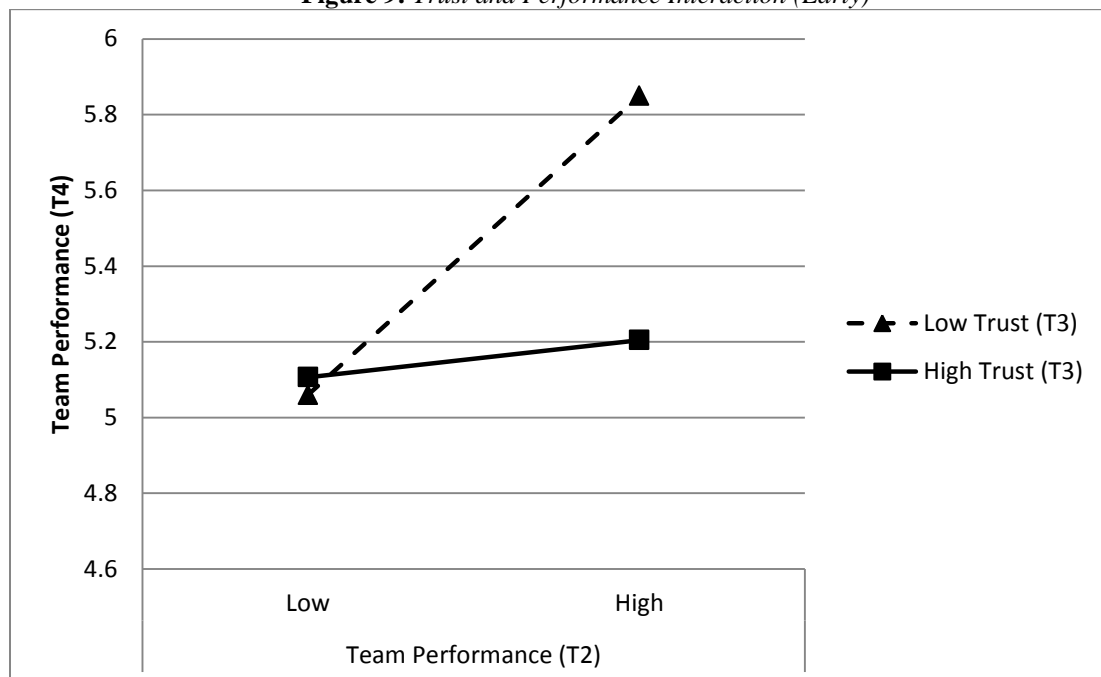
much better performance in a subsequent episode than does a high level of trust. Teams which

maintained a low level of trust early in team tenure seem to reap greater benefits than those who

have a high level of trust. The shape of the interaction is also interesting, indicating that the

teams who had the best performance at T4 had both high performance at T2 and a low level of

trust in the team at T3. If a team either had high trust at T3 or low performance at T2, their

performance at T4 suffered.

Figure 10 shows that these relationships are somewhat different for teams late in their

tenure together. In this plot, the line for high trust is has a significantly positive slope (p < .01),

while the line for low trust has no significant slope. The plot indicates that, for teams who had

low performance at T6, maintaining high trust in the team led to lower performance in T8 than

did low trust in the team. In contrast to the results for early team tenure, teams late in their

tenure together perform best when they either have low trust in the team or performed well

**Figure 10:** *Trust and Performance Interaction (Late)*
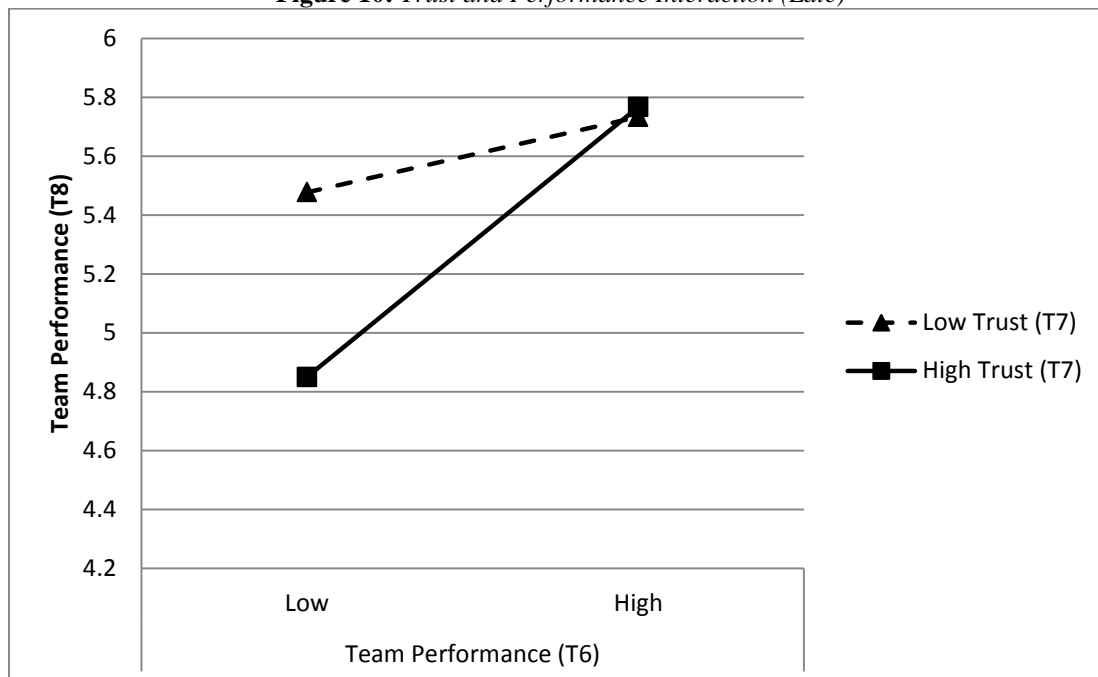
during the last performance episode. In other words, it appears that performance and low levels

of trust are both required for top team results early in their time working together, but that later

in team tenure either low trust or high past performance is sufficient. I discuss these results further in the discussion.

Predictors of overall team performance. While the results for Hypothesis 9 are somewhat discouraging, it is possible that the patterns of trust over time for groups who performed well were different than those for groups who performed poorly. Given that the central point of this dissertation is that cognitive or social biases can lead groups to trust too much, and that trust will then cause their performance to suffer, I wanted to see if such a pattern played out for the teams in this study. To do this, I created a measure of overall performance by adding together all performance ratings for the team across all four performance episodes. This measure would thus indicate how well the team did over the entire team tenure. I then split the sample based on this

Figure 11: *Trust Patterns of Low and High Performing Groups*
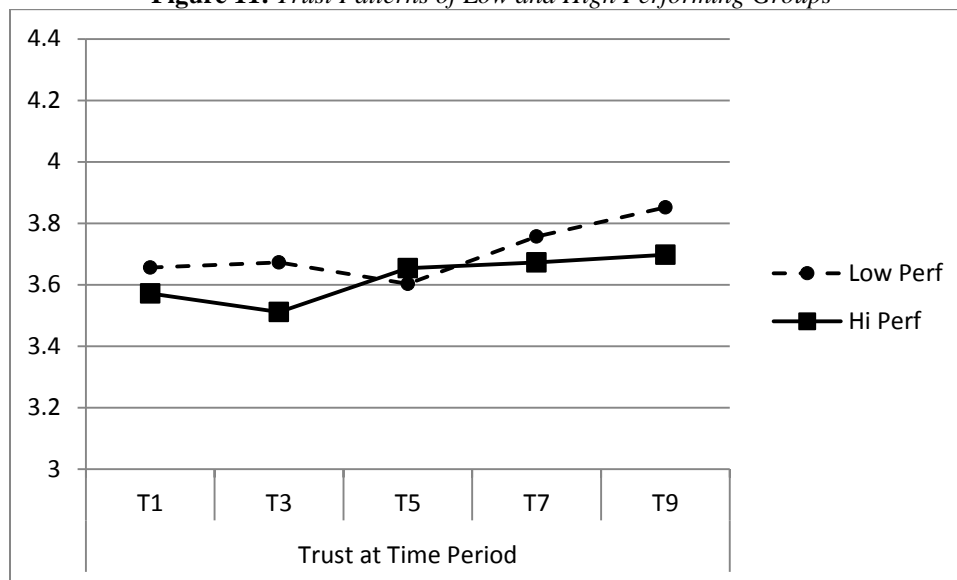
overall performance measure, by taking all observations which were greater than the mean plus half of one standard deviation and categorizing those observations as high performers, and taking all observations which were less than the mean minus half of one standard deviation and

categorizing those observations as low performers. I then plotted the average trust levels over

time for teams with high and low performance (shown in Figure 11).

The differences between these trust trajectories may look minor at first, but two points in

particular show some interesting distinction between high performing and low performing teams.

ANOVA results show that high-performing groups had significantly lower ($p < .05$) trust in the

team than low performing groups at T3 (after the initial performance episode) and T9 (at the end

of team tenure). The significant results for T3 indicate that the main difference between teams

who excel and teams who do not may be how quickly they internalize the information they have

received and use it to properly set their levels of trust. Trust at T1 (swift trust) is statistically

similar between the two groups indicating that both are setting their trust level according to the

information available to them. However, after having an opportunity to observe the actual

performance of their team, low performing teams maintained a higher level of trust than did high

performing teams.

Table 17. *T-Test Results for Change in Trust Split by Overall Performance*

Variable	Overall Perf.	n	Mean	s.d.	t	Sig.
Change in Trust (T1-T3)	High	214	0.01	0.60	0.25	0.80
	Low	200	0.09	0.62	1.97	0.05
Change in Trust (T3-T5)	High	201	0.02	0.46	0.56	0.58
	Low	182	-0.03	0.50	-0.83	0.41
Change in Trust (T5-T7)	High	208	0.05	0.45	1.49	0.14
	Low	176	0.11	0.48	3.12	0.00
Change in Trust (T7-T9)	High	211	0.03	0.53	0.84	0.40
	Low	186	0.04	0.52	1.04	0.30

In order to get a better understanding of the differences between high and low performing

teams during each time period, I ran ANOVA on the change in trust over time for both high

performing and low performing teams (the results are displayed in Table 17). Teams who

performed poorly overall had a significant gain in trust after the initial performance episode, while teams who did well overall did not significantly increase their trust. A similar pattern is shown after the third performance episode (T6), with low performing groups increasing their trust and high performing teams decreasing theirs. It appears that low performing teams are more willing to trust one another, building higher levels of trust in the team over time, but that trust does not lead to higher performance on team goals.

To examine the special nature of trust after the initial performance episode, I ran a simple regression using it to predict overall performance for the team (while controlling for the initial team performance). The results are presented in Table 18. Based on these results, trust after the initial performance episode is significantly negatively related to overall team performance, controlling for team performance on the initial performance episode. While this certainly isn't a confirmation that teams which properly adjust their level of trust will outperform those who maintain inflated trust levels, it does indicate that high trust early in team tenure can be harmful to overall team performance. I cover this further in the discussion.

Table 18: *Hierarchical Regression for Trust and Overall Team Performance*

		Coeff.	
	Variable	**Step 1**	**Step 2**
	Intercept	13.24**	16.54**
1	Team Performance (T2)	1.62**	1.62**
2	Trust (T3)		-0.89*
	ΔR^2	0.58**	0.02*

Notes: DV is Overall Team Performance. All variables are at the team level and have been grand mean centered. N = 91.
† $p < .10$ * $p < .05$ ** $p < .01$

Given that trust after the initial performance episode is so important, it may be useful to see if trust at that time is based on the same factors which produce swift trust. Trust at T3 in this

experiment has a significant (negative) effect on the overall performance of the team, and if my

theoretical predictions are correct, this should be because it is based on factors such as trust

Table 19: *Hierarchical Regression for Antecedents of Trust (T3)*

	Variable	Coeff.	
		Step 1	Step 2
	Intercept	2.89**	
	Trust Propensity	0.18**	
	Demographic Similarity	0.34**	
	ΔR^2	0.06**	
	Intercept	1.32**	0.95**
1	Swift Trust	0.65**	0.61**
2	Trust Propensity		0.12**
	Demographic Similarity		0.19*
	ΔR^2	0.28**	0.02**

Notes: DV is Team Performance (T2). All variables are at the individual level.
  n = 379.
  † $p < .10$ * $p < .05$ ** $p < .01$

propensity and demographic similarity instead of actual information on the ability and integrity

of the team. To test this, I ran the regressions shown in Table 19, and found that trust propensity

and demographic similarity do have significant positive predictive power for trust at T3. This

significant statistical effect holds even when controlling for swift trust (trust at T1), and is

particularly interesting because the team's performance during the initial performance episode

does not have a significant relationship with trust at this time. In other words, the level of trust

in the team after the initial performance episode is based more on trust propensity and

demographic similarity than it is on actual team performance, which ought to provide concrete

cues on the ability and integrity of the team.

Post-Defense Analyses

After the defense, I ran an additional set of analyses based on the suggestions of the

committee. These analyses are primarily designed to examine two things: the impact of the skew

of trust and contribution on the team, and the effect of feedback provided to the team on subsequent trust and team performance.

   Skew in trust and team performance. While variance in trust among team members did not have a significant effect on team performance, there is a chance that teams which have a single member who is significantly different from their peers could behave differently than those whose members are generally in agreement. To evaluate this, I calculated the skew of the trust measure for each team, and used this as a predictor of team performance. I also examined the interactive effects between mean trust, trust variance, and trust skew on team performance at each time period.

   The interactive effects of mean, variance, and skew of trust were not significant at any time period, and main effects were not significant for all time periods but one: team performance at T4 (the second performance episode). The results for this analysis are displayed in Table 20, and indicate that average team trust is negatively related to subsequent performance, while skew is positively related to subsequent performance. This means that teams which have generally

Table 20: *Regression Results for Trust Moments and Team Performance at T4*

	Variable	Step 1	Step 2	Step 3	Step 4
			Coeff.		
	Intercept	5.30**	5.30**	5.41**	5.43**
1	Team Performance (T2)	0.21**	0.19**	0.21**	0.21**
2	Trust Mean (T3)		-0.41*	-0.29	-0.14
	Trust Variance (T3)		0.21	0.37*	0.44*
	Trust Skew (T3)		0.19*	0.22*	0.26**
3	Mean X Variance			0.24	0.34
	Mean X Skew			-0.18	-0.25
	Variance X Skew			0.33†	0.29
4	Mean X Variance X Skew				0.65
	ΔR^2	0.09**	0.08*	0.06	0.02

Notes. DV is Team Performance (T4). All variables are at the team level. $n = 94$.
     † $p < .10$ * $p < .05$ ** $p < .01$

low trust, but have 1-2 members who maintain high levels of trust in the team, do favorably on subsequent projects. In other words, it seems that having one or two "true believers" on a team which still has a majority of "doubting Thomas" types can be beneficial for the team. However, this result only holds at this particular time in the team's tenure, when they have completed one task together and are preparing to complete a second task. At other time periods, the relationship is not significant.

Interestingly, trust average and skew at T3 (after the initial performance episode) are also significant in predicting overall team performance. It appears that trust after the initial performance episode is an important measure when it comes to the ability of the team to accomplish goals in an acceptable manner. These results, presented in Table 21, are the same as those for the subsequent performance episode: low average trust in the team, with one or two team members who have significantly higher levels of trust in the team, results in better overall team performance.

Table 21: *Regression Results for Trust Moments and Overall Team Performance*

			Coeff.		
	Variable	Step 1	Step 2	Step 3	Step 4
	Intercept	21.64**	21.64**	21.84**	21.85**
1	Team Performance (T2)	1.62**	1.59**	1.63**	1.63**
2	Trust Mean (T3)		-0.95*	-0.79†	-0.70
	Trust Variance (T3)		0.48	0.78*	0.83*
	Trust Skew (T3)		0.36*	0.40*	0.43*
3	Mean X Variance			0.98	1.04
	Mean X Skew			0.02	-0.04
	Variance X Skew			0.60	0.57
4	Mean X Variance X Skew				0.41
	ΔR^2	0.58**	0.04**	0.02	0.00

Notes. DV is Overall Team Performance. All variables are at the team level. n = 94.
  † $p < .10$ * $p < .05$ ** $p < .01$

Skew in individual contribution and trust in the team. Variance in the individual contribution toward the completion of a task by the members of the team was negatively related to the subsequent trust in the team, indicating that team members who share the workload less evenly are less likely to trust one another. In order to analyze the impact of skew in individual contribution on subsequent trust in the team, I ran regressions using mean individual contribution, individual contribution variance, and individual contribution skew, as well as their interaction terms, as predictors of trust in the team. Results for contribution influencing the final trust measurement of the semester (at T7) were non-significant for skew and for any of the

Table 22: *Multilevel Regression for Ind. Contribution Moments and Trust*

|	Variable	Level	Step 1	Step 2	Step 3	Step 4
	DV: Trust (T3) (Level-1 n=397, Level-2 n=90)	1				
	Intercept		3.65**	3.66**	3.68**	3.68**
1	Swift Trust (T1)	1	0.64**	0.64**	0.64**	0.64**
2	Ind. Contribution Mean (T3)	2		0.00	0.03†	0.03†
	Ind. Contribution Variance (T3)	2		-0.04**	-0.03*	-0.04*
	Ind. Contribution Skew (T3)	2		0.05	0.05	0.01
3	Mean X Variance	2			-0.01*	0.00
	Mean X Skew	2			0.01	-0.01
	Variance X Skew	2			-0.01	-0.02
4	Mean X Variance X Skew	2				0.01**
	DV: Trust (T5) (Level-1 n=364, Level-2 n=89)	1				
	Intercept		3.66**	3.67**	3.67**	3.67**
1	Trust (T3)	1	0.74**	0.73**	0.73**	0.73**
2	Ind. Contribution Mean (T5)	2		-0.01	-0.01	-0.01
	Ind. Contribution Variance (T5)	2		-0.05**	-0.05**	-0.05**
	Ind. Contribution Skew (T5)	2		-0.02	-0.02	-0.02
3	Mean X Variance	2			-0.01†	-0.01*
	Mean X Skew	2			-0.01	-0.01
	Variance X Skew	2			-0.01	-0.01
4	Mean X Variance X Skew	2				0.00

Notes: All Level 2 variables are grand mean centered. Trust is group mean centered.
† $p < .10$ * $p < .05$ ** $p < .01$

interaction terms. However, the results for trust at T3 and T5 were more promising, and I have displayed them in Table 22.

While there are no significant results for a main effect of individual contribution skew on trust, I do find an interactive effect of the mean contribution and the variance in contribution on subsequent trust. In addition, in the period after the initial performance episode, I find a three-way interaction between mean, variance, and skew of individual contribution significantly predicts subsequent trust in the team. To further determine the pattern of these interactions, I created plots for them. The two-way interaction plot for trust at T3 is shown in Figure 12, and the three-way interaction plot for trust at T3 is shown in Figure 13 (the two-way interaction for trust at T5 is similar to that of trust at T3, so it was not included).

**Figure 12:** *Individual Contribution Mean and Variance Interaction*
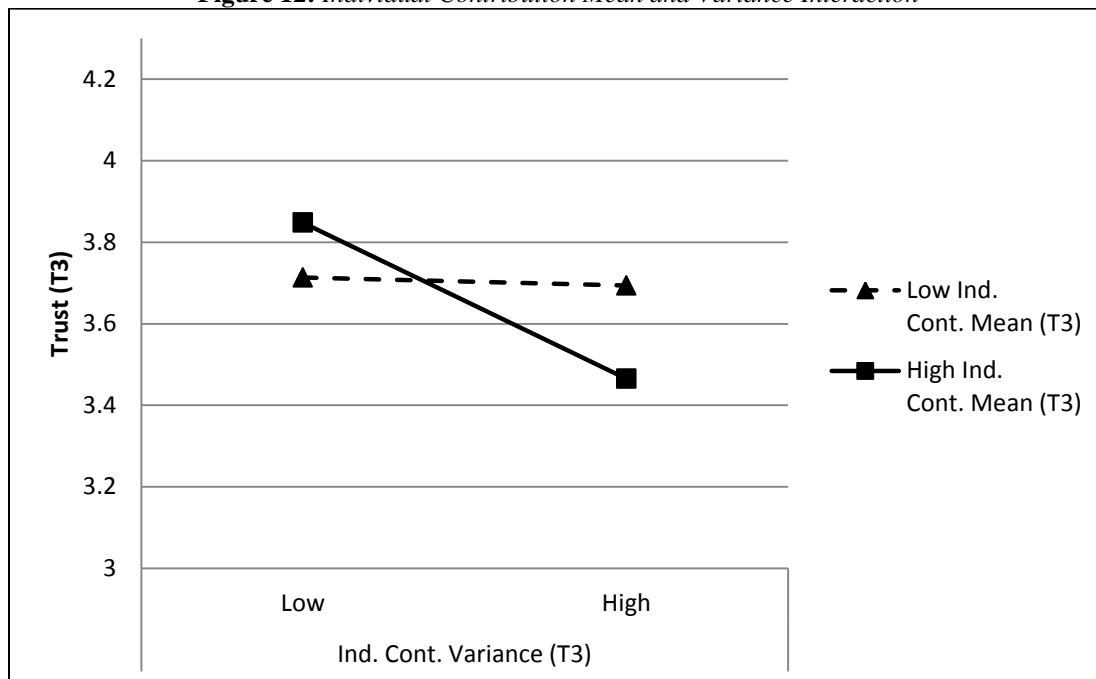
Based on the plot for the two-way interaction, it appears that teams who have low average contribution to the first performance episode do not alter their trust in the team based on the variance in contribution. For teams who have a high average contribution, however, higher

variance in contribution across team members results in lower trust in the team (the relationship is negative and significant, with a slope test p-value < 0.01). This indicates that teams which, on average, put more effort into accomplishing team goals are less forgiving of team members who are social loafing.

The results become even more interesting when the three-way interaction is plotted. Teams who are low in mean individual contribution, and low in skew (meaning a negative skew, with one or two members who contribute significantly less than the rest of the team) show no relationship (non-significant slope test) between the variance in contribution and subsequent trust in the team. For all other teams, however, higher variance in contribution toward team projects

Figure 13: *Individual Contribution Three-Way Interaction*
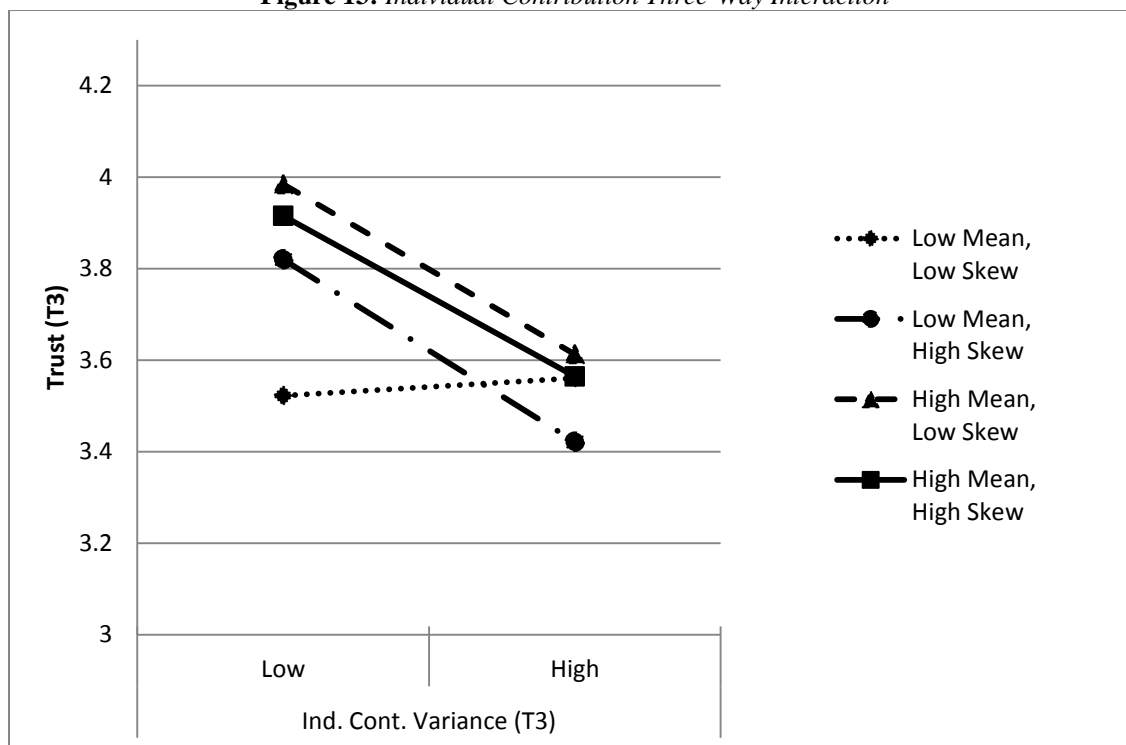
seems to result in lower subsequent trust. The slope tests for these negatively-sloped lines are not significant, so the relationship is not necessarily a strong negative one, but it is significantly different from the relationship for teams with low mean and low skew. It appears that we have

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an apathy effect, where teams who are not contributing, and who do not have a single member who "picks up the slack" (which would be indicated by high skew), don't use differences in contribution as a useful indicator of a lack of trustworthiness. For all other groups, however, differences in contribution seem to indicate that the members of the team are less trustworthy.

Team feedback and subsequent trust. Given that my hypotheses about the effect of performance on subsequent trust are based on these measures of performance being salient to the team members, it would be useful to see if the feedback given to students (in the form of grades on their team assignments) serves as a predictor of subsequent trust. I first re-ran the equations for Hypotheses 2 and 3, using team feedback (the grade that the team received on their task)

Table 23: *Multilevel Regression for Feedback Measures and Trust*

	Variable	Level	Step 1	Step 2	Step 3	Step 4
	DV: Trust (T7) (Level-1 n=384, Level-2 n=95)					
	Intercept		3.75**	3.75**	3.75**	3.74**
1	Trust (T5)	1	0.77**	0.77**	0.71**	0.71**
2	Team Feedback (T6)	2		-0.05	-0.05	-0.04
3	Performance Attribution (T5)	1			0.02	0.00
	Team Cohesiveness (T5)	1			0.12*	0.13*
4	Feedback X Attribution					-0.14*
	Feedback X Cohesiveness					-0.06
	DV: Trust (T7) (Level-1 n=383, Level-2 n=96)					
	Intercept		3.66**	3.66**	3.66**	3.66**
1	Trust (T5)	1	0.74**	0.74**	0.67**	0.67**
2	Exam I Grade (T6)	2		0.01*	0.01*	0.01*
3	Performance Attribution (T5)	1			0.08	0.08
	Team Cohesiveness (T5)	1			0.07	0.06
4	Exam I Grade X Attribution					-0.01†
	Exam I Grade X Cohesiveness					0.00

Notes: Team Feedback is grand mean centered. All other variables are group mean centered.
† $p < .10$ * $p < .05$ ** $p < .01$

instead of the performance rating. The results for most of the time periods were inconclusive, with non-significant relationships throughout. The lone exception was the prediction of trust at

T7, after the third performance episode. Another useful piece of feedback on the ability of the team is received during T6, when the students received their grades for the first exam of the semester. This grade is salient to the students because it represents a significant part of their course grade, and also provides a concrete measure of success in the class which should serve as an indicator of ability. The results for the two regressions are displayed in Table 23. While the main effect for team feedback is not significant, the team's average grade for exam 1 is a significant positive predictor of subsequent trust in the team. In both cases, however, the interaction term for the feedback measure and performance attribution is at least marginally significant. To get a clearer, more parsimonious indication of these relationships, I removed team cohesiveness from the equations and re-ran the regressions. These results are displayed in Table 24, and show that the interaction terms are both still significant.

**Table 24:** *Multilevel Regression for Feedback Measures and Trust*

	Variable	Level	Step 1	Step 2	Step 3	Step 4
	DV: Trust (T7) (Level-1 n=384, Level-2 n=95)					
	Intercept		3.75**	3.75**	3.75**	3.74**
1	Trust (T5)	1	0.77**	0.77**	0.76**	0.76**
2	Team Feedback (T6)	2		-0.05	-0.05	-0.04
3	Performance Attribution (T5)	1			0.04	0.04
4	Feedback X Attribution					-0.17**
	DV: Trust (T7) (Level-1 n=383, Level-2 n=96)					
	Intercept		3.66**	3.66**	3.66**	3.66**
1	Trust (T5)	1	0.74**	0.74**	0.69**	0.69**
2	Exam I Grade (T6)	2		0.01*	0.01*	0.01*
3	Performance Attribution (T5)	1			0.09†	0.09†
4	Exam I Grade X Attribution					-0.01*

Notes: Team Feedback is grand mean centered. All other variables are group mean centered.
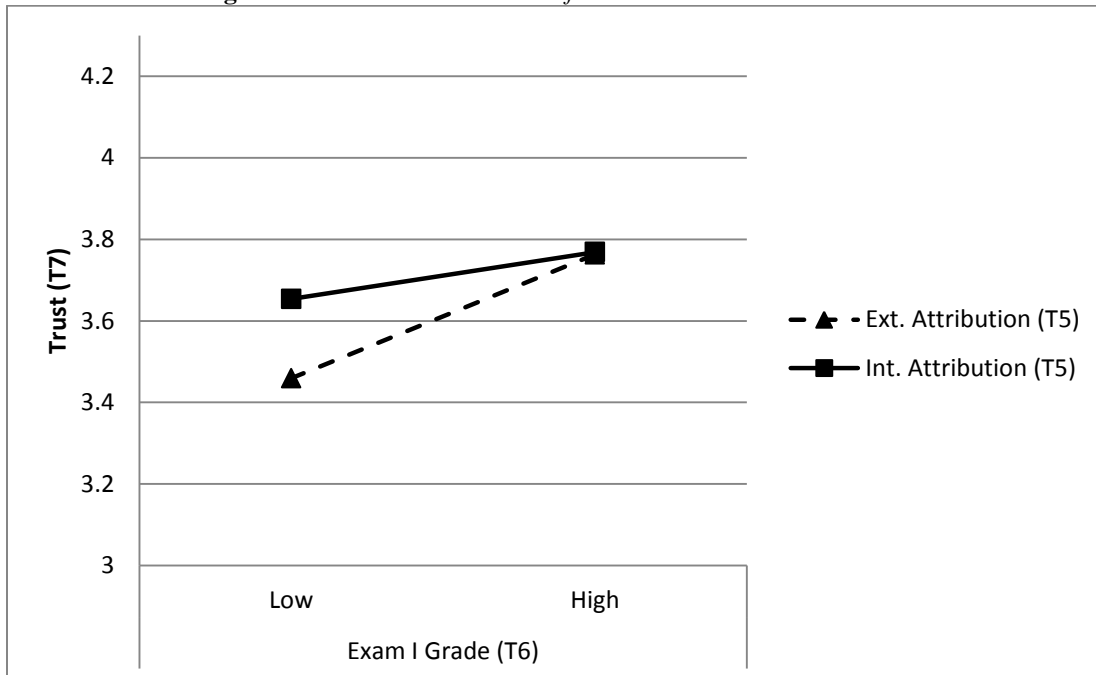 † $p < .10$ * $p < .05$ ** $p < .01$

To determine the shape of these interactions, I plotted both, which are included here as Figures 14 and 15. The results are counter-intuitive, as they indicate that teams who have an

Figure 14: *Team Feedback and Performance Attribution Interaction*
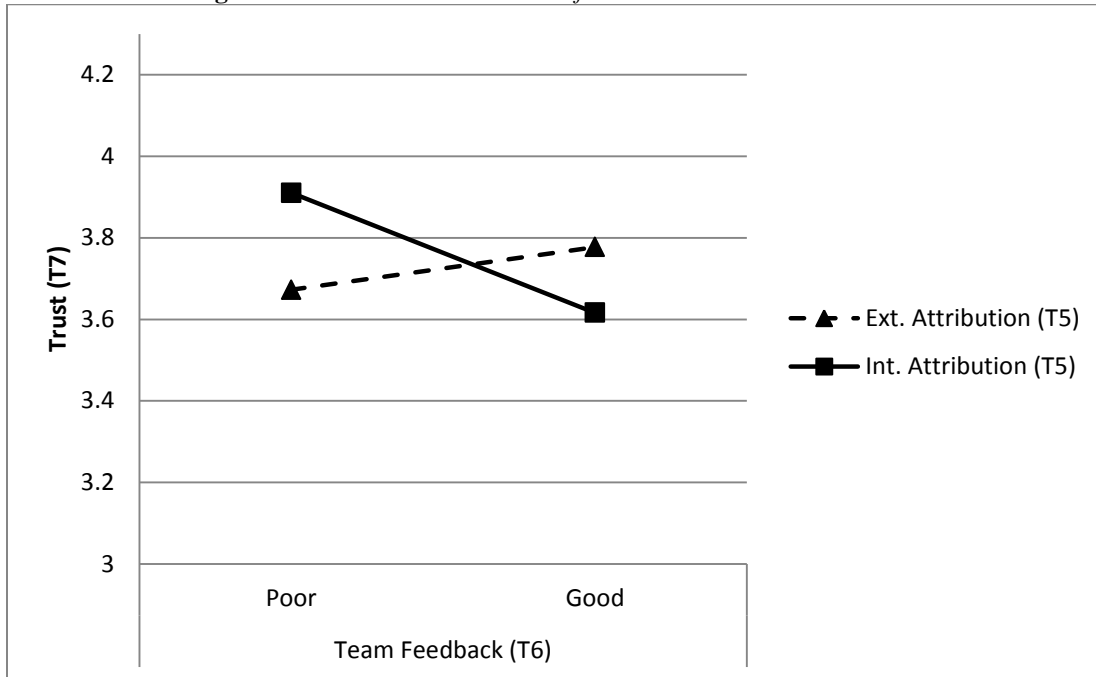
Figure 15: *Exam I Grade and Performance Attribution Interaction*

external attribution for their performance (the team's performance on tasks is not due to their

own abilities, but some factor outside of the team's control) base their subsequent trust on the

feedback they have received, but teams which have an internal attribution for their performance do not. In other words, a team that believes that their own abilities have an effect on their performance do not change their trust in the team based on the feedback they have received on past team performance. While this is an interesting finding, I feel that it may be due to artifacts of the way that students were surveyed. In order to prevent common method bias, I used attribution from T5, which was specifically about the team's perceptions of their performance on the second performance episode (during T4). Unfortunately, the trust measure in T7 is after the team has worked together on the third performance episode (in T6). I do have an attribution measure for this performance episode, but it was gathered in the same survey as the DV. When I run the equations with these attribution ratings, I do not get a significant interaction term. In the end, I feel that this finding is likely due to measurement errors rather than an actual psychological effect.

Team feedback and trust predicting performance. In hopes of gaining some useful relationships for the team feedback measures, I used them as a replacement for past performance in the equations from my supplemental analyses which examine how trust and past performance predict subsequent performance. The results for these equations are displayed in Table 25. The original regressions indicated that performance at T4 and performance at T8 were significantly predicted by the interaction between trust and past performance. Feedback, on the other hand, only shows a significant interaction predicting performance at T6, the third performance episode. In all cases, the main effect of feedback and trust are not significant predictors of team performance. I also ran these equations for the Exam I Score as a feedback measure, but there were no significant main effects or interactions.

Table 25: *Regression for Trust and Team Feedback (With Interaction)*

	Variable	Step 1	Step 2	Step 3
	DV: Team Performance (T4) (n=94)			
	Intercept	5.30**	5.30**	5.30**
1	Team Performance (T2)	0.21**	0.27**	0.28**
2	Trust (T3)		-0.45*	-0.47*
	Team Feedback (T2)		-0.16**	-0.16**
3	Trust X Team Feedback			0.08
	Δ R²	0.09**	0.13**	0.00
	DV: Team Performance (T6) (n=93)			
	Intercept	5.71**	5.71**	5.73**
1	Team Performance (T4)	0.27**	0.28**	0.27**
2	Trust (T5)		-0.16	-0.28
	Team Feedback (T4)		-0.08	-0.10
3	Trust X Team Feedback			-0.27*
	Δ R²	0.08**	0.02	0.05*
	DV: Team Performance (T8) (n=91)			
	Intercept	5.45**	5.45**	5.45**
1	Team Performance (T6)	0.35**	0.33**	0.33**
2	Trust (T7)		-0.33	-0.33
	Team Feedback (T6)		0.05	0.05
3	Trust X Team Feedback			0.00
	Δ R²	0.11**	0.03	0.00

**Notes:** All variables are at the team level and grand mean centered.
    † $p < .10$ * $p < .05$ ** $p < .01$

I plotted the significant interaction in Figure 16. The interactive effect does show an interesting pattern, as teams who received good feedback on the previous performance episode have a significant negative ($p < 0.05$) relationship between trust and subsequent team performance. For teams who received poor feedback, trust does not have an effect on subsequent performance. It appears that teams who received solid performance reviews and trust one another may be likely to avoid key monitoring and backup behaviors during the subsequent

performance episode, "resting on their laurels" instead of maintaining good team monitoring processes.

Figure 16: *Trust and Team Feedback Interaction*
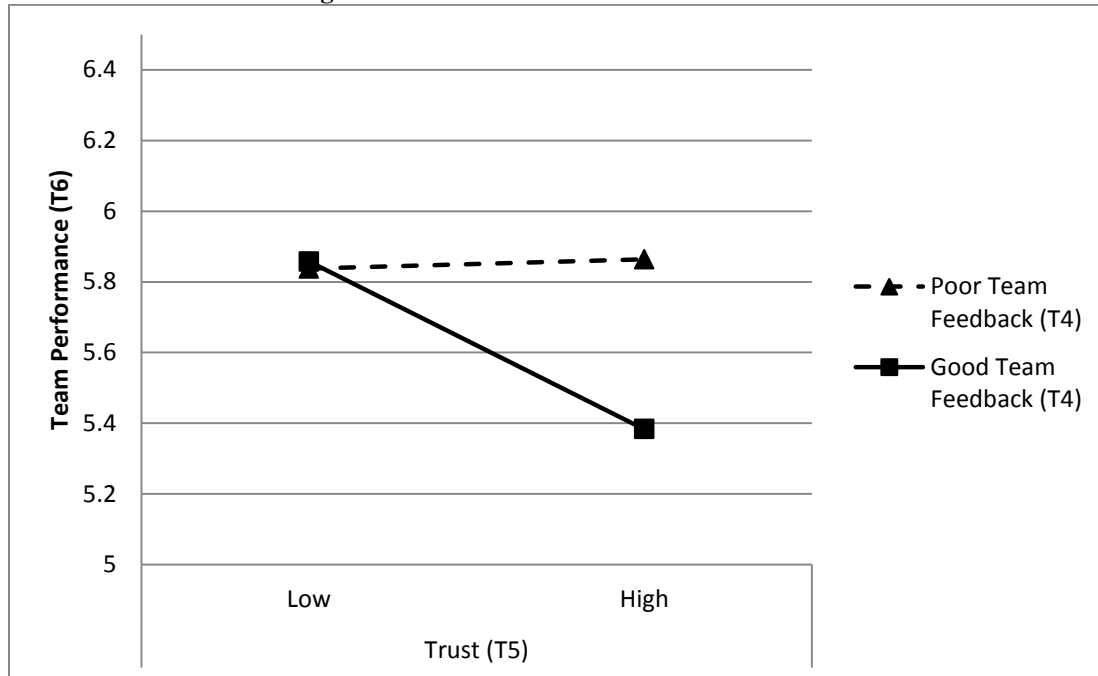
one another may be likely to avoid key monitoring and backup behaviors during the subsequent performance episode, "resting on their laurels" instead of maintaining good team monitoring processes.

DISCUSSION

Trust and Performance

While my attempt to discover the moderators which will help to unravel the relationship between trust and subsequent performance ultimately failed, I am hopeful about some of the results for trust and performance. A negative relationship between trust after the initial team performance episode and subsequent team performance provides a counter-example to the support swift trust has seen in the literature over time. It also reinforces the warning that Meyerson, et al. (1996) provided about teams needing to make good choices about their level of trust in the team. In my sample, having too much trust was detrimental to the team's ability to work together at first.

Perhaps more importantly, teams which had high trust after the initial performance episode did worse overall than did teams who maintained a moderate level of trust. This finding may come the closest to supporting the main tenet of this dissertation: that teams who properly adjust their trust levels will outperform those who maintain artificially high trust due to cognitive or social biases. While the variance in trust levels was relatively low, there was a significant advantage in overall performance for teams who maintained lower trust after the initial performance episode. In other words, teams who used the information from the performance episode to properly adjust their trust levels, rather than relying on their already inflated swift trust as a guide, did better on the tasks overall. I believe that this finding in particular should prove fruitful in future studies of trust early in team tenure.

In a similar fashion, the patterns of trust over time for low performing groups and high performing groups appear to be different, particularly after the initial performance episode. It does appear that low-performing teams had trust levels which varied more widely over the

course of the project than did those teams who performed well. Furthermore, those teams who had low performance showed a trend of periodic gains in trust which were not shared by groups with high overall performance. This inability to make adjustments to the level of trust in the team appears to have resulted in lower overall performance, but more studies are needed to conclusively prove that this pattern holds.

Further complicating the effect of trust on performance is the influence that the interaction of past performance and trust has on subsequent performance episodes. Early in team tenure, it appears that teams need both high past performance (indicating expertise) and low levels of trust in the team (indicating more monitoring behaviors) in order to succeed. However, by the end of their time together, teams who had either expertise or monitoring were able to perform at a roughly equivalent high level. This interactive relationship between past performance and trust will require further research to fully understand, but the differences in results for early and late team tenure make the findings I have interesting.

The variance across team members in their level of trust in the team had no significant relationship with subsequent team performance. While I predicted that variance in trust would actually increase performance, and the few studies in the literature on trust variance predicted the opposite, the end result for this study is that these within-team differences in trust level had no effect on the performance of the team. This could be due to the nature of the team task that I used. Because the team task was an academic writing task with multiple questions, it was very easy for the team to break the task into pieces and complete it separately, coming together only at the end to meld their answers into a completed document and turn it in. This pooled interdependence is the least connected interdependence relationship available for teams (Thompson, 1967), and requires less coordination and communication than a more complex team

task would. When I designed this study, I thought that such a task would be fine, as those who did not trust in the team would be likely to monitor their team members more closely, as predicted in my hypotheses. Unfortunately, it is also possible that such a task makes it possible for teams with a lot of within-team differences in trust to still accomplish tasks together, as the members do not necessarily interact until the work itself is finished, and deficiencies in the final production of weak team members can be fixed at the end when the different portions are combined into a cohesive whole. In such an environment, having variance in the level of trust in the team has less of an effect on team performance, as most work is still done individually and members have complete control over their portion of the project.

Also disappointing is the lack of a relationship between performance and subsequent trust in the team that I predicted in Hypothesis 6. Given that team performance provides an opportunity to evaluate the ability and integrity of the team first-hand, I thought that it would naturally assist team members to adjust their trust levels. It appears, however, that team performance is less salient to the members of the team than other factors (such as individual contribution), and thus does not provide a useful indicator of the trustworthiness of the team. It is possible that the task interdependence is once again confounding these results, but given that the teams received grades for each of their performance episodes, I thought that the pooled nature of the task would not impede their ability to use that information.

It is interesting that ability predicted team performance, but attendance did not. My measure for attendance was the percentage of days in which the student was present in class, which I thought would be salient to the other team members. However, I was not able to capture the behavior of the participants around those absences in order to tell if the rest of the team felt that it was a case of careless absenteeism or an unfortunate necessity. For instance, a student

who emails their team to notify them that they are ill and will not be in class would receive exactly the same score as a student who did not show up to a meeting and did not notify anyone of the reasons why. I simply did not collect the information necessary to differentiate between absences which represent a true lack of attendance and those which team members would forgive out of hand, and I believe that reduced the effectiveness of my attendance measure.

Trust and Other Variables

While the main focus of this dissertation was on the cyclical relationship between trust and team performance, I did find two interesting relationships between trust and other variables which are important to the team. Trust positively and significantly predicted the subsequent effectiveness of team processes, providing a mediation path through which trust could eventually influence team performance. It seems somewhat obvious that trust should increase the effectiveness of team processes, as trust seems essential to the communication and coordination of the team, but this does fly in the face of previous research on trust. Given that trust has been shown to reduce monitoring of others in the team, as I discussed earlier, it seems likely that the relationship between trust and team processes may not be overwhelmingly positive and significant.

It is possible that the results for trust predicting team processes are tainted by the measure I used for team processes. Because I dropped backing up behaviors and team coordination from the team process measure, I have removed areas where trust might negatively impact team processes. To verify that the removal of these two items did not negatively impact the measure, I also ran the same equations with the full 10-item measure of team processes, and the results were the same. I am further concerned that my measure of team processes is not related to the performance of the team, in contrast to the prevailing literature on team processes. Again, I feel

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that the lack of team interdependence for my chosen task may be the cause here. I would predict that a more complex team task would feature a much stronger relationship between team processes and team performance.

One finding which made perfect sense, however, was the negative relationship between individual contribution variance and subsequent trust. The participants of this study are well-accustomed to team projects in a classroom environment that heavily feature social loafing. However, rather than consider social loafing as a price that all teams must pay, team members adjusted their level of trust in the team consistently lower when faced with a large variance in their individual contribution to the team project. In order to maintain a high level of team trust, it is important for teams to evenly distribute the work on the project across team members. This finding seems obvious, but I am not aware of other studies that have shown this particular relationship before.

Limitations

The choice of a student sample for this dissertation was advantageous because it presented an opportunity to observe newly-formed teams working on periodic performance episodes over a relatively short amount of time (15 weeks). Unfortunately, a student sample presents its own limitations when it comes to the generalizability of the study. My participants were young and had little work experience, which could color their impressions of the task and their other team members in a different way than would be likely in a field sample of employees in an organization. Furthermore, the task which the teams performed was a case-like writing task which is likely both less interactive and less difficult than team tasks performed in an ordinary work environment.

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The students in the sample also knew that their team would only be together working on tasks for the duration of the one semester class, which will change their intrinsic motivation to build trust and cohesiveness bonds with one another. As Meyerson, et al. (1996) point out, teams which are only together for a short time period are likely to form enough bonds with one another to complete their task, but are unlikely to develop any further social links with one another, as they know that their time together will be brief. While I do find relatively high levels of trust in the survey responses, I am concerned that the trust which was built is driven more by expedience than it is by the cognitive or social factors which I propose in my theory section.

As stated many times in this dissertation, the task which was chosen was very low in team interdependence, and I believe that this had a pronounced effect on some of my results. The concerns I have about the task are reduced somewhat by the behavior of the teams in their recitation sections. Teams in these sections worked for 1.5 hours on each performance episode while sitting next to one another in the classroom, which encourages them to interact when they have questions or difficulty. In this way, teams did often brainstorm solutions to use in the written assignment, but such team activities were not necessary to satisfactorily complete the task. In future studies of trust in teams, I would use a task which requires more interdependence from the team members in order to emphasize team processes in the performance episode.

One other item that I would change in future studies is the number of, and timing of, the surveys. I was concerned that the students would be less likely to fill in the surveys if there were a large number of them, and thus tried to put as many survey items as possible in each survey. This meant that items which dealt with team cohesiveness and performance attribution were written to get participants to recall their team's most recent performance episode, but were filled out at the same time as the items on trust. This led to the problems with common method bias in

the tests of Hypotheses 6 and 7. If I were to run this sort of study again, I would have an additional survey round after the results of the performance episode are known, but before the survey on trust is filled out.

Theoretical Implications and Future Research

The negative relationship between trust early in team tenure and performance for the team is theoretically interesting and in direct conflict with the current research on trust in a team context. While trust has overwhelmingly been seen as a required, positive driver of a team's ability to work together effectively, this study shows that high levels of trust which may not be justified can be detrimental to a team's performance, both early on and over the long term. More research needs to be done on trust in newly-formed teams, especially on the transition from swift trust (before the team works together on a project) to team trust after the initial performance episode. Teams which manage this transition and kept from artificially inflating their trust did better over the course of my project. This result should be tested in other environments to determine if the negative relationship holds, and the length of time over which it has an effect on team performance.

Furthermore, the relationship between trust and performance, which has long been contentious in the teams literature, needs to be examined more deeply and with more nuance. Longitudinal study of trust and performance in active teams is required to determine if team members always ignore performance feedback when evaluating the ability and integrity of their team members, or if this phenomenon is unique to the classroom context I used. Too much effort has been spent on the predictive power of trust on subsequent performance, and not enough has been spent trying to unravel the effect that performance has on subsequent trust.

In a similar fashion, this study raises the important question of what effect task interdependence has on the trust and performance of the team. Given the negative relationships between early trust and team performance for a pooled interdependence task, would making the task more complex also increase the positive influence trust has on team performance? Are task complexity or task coordination requirements useful as moderators of the relationship between trust and performance? Further studies of trust in teams should examine this as a possible way to explain the inconsistent results the literature has found for trust's influence on performance.

Finally, more studies of trust over time are necessary to determine if the trajectories of trust in the team are fundamentally different for high performing groups and low performing groups. Are the patterns which appear in Figure 11 consistent with teams of varying tenures, or are they specific to newly-formed teams? Does the punctuated equilibrium model apply to low performing teams only? If so, how do we explain the behavior of high performing teams? These topics are only going to be examined properly with longitudinal studies of trust in the team, which are rare in both the trust and teams literature.

Practical Implications

Managers have been told for many years that trust is essential to teamwork, and that they should encourage the formation of high trust in teams as early as possible. However, this study shows that high trust early in team tenure is actually harmful to the overall performance of the team. Instead, it would be best for managers to provide teams with more opportunities to work together on meaningful projects early in team tenure so that there is ample evidence of the actual ability and integrity of the team. This will encourage team members to adjust their level of trust in the team to an appropriate level rather than maintaining high trust in a team which is not particularly capable.

When designing teams, it is important to understand that demographic homogeneity can lead to teams forming high levels of trust early in their tenure together. While this may seem like a positive, it actually impedes the team members from monitoring one another and providing backup for members who are falling behind. It is also important to include team members who are low on trust propensity in the team in order to prevent these sorts of problems. While team members should still strive to build trust with one another, that trust should be built slowly and deliberately, using evidence of team ability and integrity and not simply demographic or dispositional proxies for them. Similarly, it is important for team leaders to educate their teams about the dangers of trusting in the team before the capabilities of team members are known. By encouraging members to begin by monitoring one another and meeting together more often to share progress information, the negative effects of swift trust on team performance should be lessened. It is important for managers to work more closely with teams early in their tenure to manage the trust development process so that trust is based on the actual ability and integrity of the team.

One other useful piece of information from this dissertation is the deleterious effect that social loafing and other differences in contribution within the team have on the trust level of team members. Even though having high trust early in team tenure may be harmful, trust does become very important for long-term teams to function capably together. If one team member is doing the lion's share of the work, or one team member is not "pulling their weight," the team members may not build enough trust in one another to handle difficult projects or tight timelines later in their tenure.

Conclusion

While trust has long been seen as essential to team members working together effectively, swift trust may not be as consistently positive as is portrayed in the trust literature. As seen in this dissertation, teams who form strong trust bonds early are forming those bonds based on dispositional factors which are often not related to the ability and integrity of the team. As a result, those teams tend to do more poorly on the task over their time together. In contrast, teams who maintain lower levels of trust and adjust them upward slowly over the course of their time working with the team are more likely to be successful, effective teams.

It is important to note that trust is not universally negative, however. Trust helps teams more effectively use their team processes to accomplish team goals, which would suggest that teams with longer tenure than those in this dissertation would benefit greatly from a high level of trust in one another. At the end of this experiment, teams who had high trust were better able to translate past performance into performance on future projects, indicating that trust based on experience with and observation of each other can be very beneficial to the effectiveness of the team. Given that only pooled interdependence was required to complete team tasks, it is especially telling that trust is still beneficial to teams in completing their goals.

In general, trust based on solid information about the team is beneficial (and possibly necessary) to team success. Trust based on dispositional factors, or reinforced via cognitive biases instead of interaction with the team, can be very dangerous to team performance, especially early in team tenure. Teams who trust based on proxies for their members' ability and integrity may allow their confidence in each other to adversely affect their performance. As such, it is important for the research community and managers in the workplace to re-examine their unquestioning support for trust in the team.

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APPENDICES

APPENDIX A

Items for Survey Measures

<div align="center">**Items for Survey Measures**</div>

Trust Propensity

1. *In general, people really do care about the well-being of others.*
2. *The typical person is sincerely concerned about the problems of others.*
3. *Most of the time, people care enough to try to be helpful, rather than just looking out for themselves.*
4. Most people tell the truth about the limits of their knowledge.
5. Most people can be counted on to do what they say they will do.
6. Most people are honest in describing their experience and abilities.
7. Most people answer personal questions honestly.

Trust
1. Most of my teammates approach their job with professionalism and dedication.
2. *I see no reason to doubt my teammates' competence and preparation for the job.*
3. I can rely on other teammates not to make my job more difficult by careless work.
4. Most of my teammates can be relied upon to do as they say they will do.
5. If I had my way, I wouldn't let the other team members have any influence over issues that are important to the project. (R)
6. *I would be comfortable giving the other team members complete responsibility for the completion of this project.*
7. I really wish I had a good way to oversee the work of the other team members on the project. (R)
8. I would be comfortable giving the other team members a task or problem which was critical to the project, even if I could not monitor them.

Performance Attribution
1. The grade that my team received on the last case question assignment was due to my team's ability at answering the case questions.
2. My team's overall mood had a noticeable effect on the grade that we received on the last case assignment.
3. The grade that my team received on the last case assignment was due to the motivation that my group had to complete the assignment.
4. *If my team had put in more effort on the last case assignment, I feel that we would have gotten a higher grade.*
5. The difficulty of the last case question assignment had a noticeable effect on the grade that my group received on it.
6. *The grade that my team received on the last case assignment was more due to luck than to anything my group did.*
7. *The grade that my team received on the last case assignment was more due to my recitation instructor than to anything my group did.*
8. *The grade that my team received on the last case assignment was completely within our control.*
9. *The grade that my team received on the last case assignment was outside of our control or influence.*

Team Cohesiveness
1. The members of this team are ready to defend each other from criticism by outsiders.
2. The members of this team help each other out on class material.
3. The members of this team get along well with each other.
4. The members of this team stick together.

Team Processes

Mission Analysis

Definition: Interpretation and evaluation of the team's mission, including identification of the mission's main tasks as well as the operative environmental conditions and team resources available for mission execution.

Examples:
-Developing mission statements
-Evaluating threats and opportunities in the environment
-Identifying projected demands and resources
-Identifying what key competitors are likely to be doing

Using the scale provided below, please select a response that best describes your team's mission analysis process. If you cannot decide between two choices, please select the one in-between.

5 - Complete Skill. Team members collectively discussed and decided on the mission (strategic vision) and evaluated the environmental conditions they faced; also, they took inventory of resources available for mission execution.

3 - Adequate Skill. Team members came up with a mission (strategic vision) but it was not derived specifically from information that was available. They had some idea how their available resources would enable them to reach their objectives.

1 - Hardly Any Skill. Team members did not collectively discuss or decide on a mission (strategic vision) and did not evaluate the environmental conditions they faced. They were not sure how their available resources related to their objectives.

Goal Specification

Definition: Identification and prioritization of goals and sub-goals for mission accomplishment.

Examples:
-Determining what and how much must be accomplished by a specified time and within certain quality standards
-Long-term goals such as building a sustainable competitive advantage and maneuvering the team into a leading position.

-Short-term goals such as entering certain markets, reducing production costs, gaining market share, etc.

Using the scale provided below, please select a response that best describes your team's goal specification process. If you cannot decide between two choices, please select the one in-between.

5 - Complete Skill. Team members prepared specific, difficult, long-term goals as well as short-term goals that would help lead to long-term goal accomplishment. Goals were prioritized and thoroughly understood by all members.

3 - Adequate Skill. Team members prepared long-term and short-term goals, but they were not especially specific, difficult, or linked with one another. There existed some disagreement about the actual goals that the team was pursuing.

1 - Hardly Any Skill. Team members did not establish clear long-term or short-term goals. Team members were often confused or disagreed about what the team was trying to accomplish.

Strategy Formulation and Planning

Definition: Formulation of strategies and courses of action for mission accomplishment. This dimension includes generic planning, contingency planning, and reactive strategic adjustment.

Examples:
-Determining primary market target and overall competitive positioning
-Developing alternative courses of actions that are tied specifically to certain performance parameters and other information
-Developing special functional area strategies (e.g., production, marketing, finance, human resources) in line with the overall strategies

Using the scale provided below, please select a response that best describes your team's strategy formulation and planning process. If you cannot decide between two choices, please select the one in-between.

5 - Complete Skill. Team members developed an overall strategy and conducted what-iffing and sensitivity analysis to test its viability. The team had specific "triggers" in place for determining future courses of action, and reacted quickly and effectively as circumstances warranted.

3 - Adequate Skill. Team members had a general idea about what the team was trying to accomplish. The team had some contingency plans in mind, but no specific decision points established for when they might change strategies.

1 - Hardly Any Skill. Team members were primarily in a responsive mode and "seeing what happens" followed by trying to make sense out of it. The team did not establish alternative courses of action tied specifically to any parameter.

Monitoring Goal Progress

Definition: Tracking task and goal progress toward mission accomplishment; interpreting system information in terms of what needs to be accomplished for goal attainment; transmitting goal progress to team members.

Examples:
-Tracking team's performance from various reports, measures, or indices
-Assessing goal success factors to help make decisions move forward
-Reporting and communicating progress of goals to team members

Using the scale provided below, please select a response that best describes your team's goal progress monitoring. If you cannot decide between two choices, please select the one in-between.

5- Complete Skill. Team members actively monitored reports and parameters to assess the extent to which goals were being accomplished. The team established specific benchmarks and individuals understood how the various indices related to goal accomplishment.

3 - Adequate Skill. Team members reviewed a number of different reports and indices and used these to gauge how well they were performing. However, the correspondence between what the team was monitoring and how it related to goal accomplishment were not clear.

1 - Hardly Any Skill. Team members were either "monitoring everything" or hardly anything at all. There seemed to be little correspondence between what the team was reviewing and what the team was trying to accomplish.

Systems Monitoring

Definition: Tracking team resources and environmental conditions as they relate to mission accomplishment. This dimension includes internal systems monitoring and environmental monitoring.

Examples:
-Utilizing industry reports and competitor analysis reports to track environmental conditions
-Monitoring and maintaining adequate costs (i.e. labor, materials, supervision, advertising, etc.), product quality, and reject rates
-Assuring adequate service to customers and stakeholders

Using the scale provided below, please select a response that best describes your team's systems monitoring process. If you cannot decide between two choices, please select the one in-between.

5 - Complete Skill. Team members knew what benchmarking reports and parameters to monitor and how they related to what the team was trying to accomplish. The team remained aware of what was going on in the competitive environment as well as how well the team was doing.

3 - Adequate Skill. Team members monitored a number of benchmarking reports and focused on which ones seemed to be most important. The team reviewed reports to make sure that things were running smoothly.

1 - Hardly Any Skill. Team members were not sure what benchmarking reports to monitor or how they related to goal accomplishment. The team reviewed reports in a general way looking only for global patterns.

Team Monitoring and Backup Behavior   *(dropped)*

Definition: Assisting team members to perform their tasks. Assistance may occur by (a) providing a teammate with verbal feedback or coaching, (b) by assisting a teammate behaviorally in carrying out actions, or (c) by assuming and completing a task for a teammate. This includes the providing of feedback and task related support and the seeking of help from teammates when necessary.

Examples:
-Team members look out for one another and assume different roles when called for
-Team has contingency plans in case one member cannot meet responsibilities
-Team members inform each other of individual progress and setbacks
-Team members offer each other feedback

Using the scale provided below, please select a response that best describes your team's systems monitoring and backup behavior. If you cannot decide between two choices, please select the one in-between.

5 - Complete Skill. Team members observed and were aware of each other's actions. They offered feedback and task related support. Individual team members sought help when necessary. The team had a specific plan for how they would operate if one or more members became unavailable.

3 - Adequate Skill. Team members observed and were aware of each other's actions. They offered feedback when necessary. Rarely did individual team members ask for help and there was only an informal strategy for dealing with member unavailability.

1 - Hardly Any Skill. Team members did not observe and were not aware of each other's actions. Little feedback was provided to each other and people did not seek help when necessary. There was no plan or strategy in place for how they would deal with member unavailability.

Coordination Activities   *(dropped)*

Definition: Orchestrating the sequence and timing of interdependent actions.

Examples:
-Exchanging information relevant to align interdependent actions and roles
-Deciding on how to distribute tasks and assignments among team members

-Determining ways to communicate/get a hold of each other
-Establishing decision processes to be used (e.g., autocratic, consensus, voting, devil's advocate, etc.).

Using the scale provided below, please select a response that best describes your team's systems coordinating activities. If you cannot choose between two choices, please select the one in-between.

5 - Complete Skill. Team members were in frequent contact with each other and had clearly understood roles and responsibilities. Everyone's input was considered. It was very clear how the team would arrive at their decisions.

3 - Adequate Skill. Team members stayed in contact with each other and had determined how they would decide on each week's set of decisions. There were some breakdowns in coordination, but nothing that was so disabling that one or more members' input was not considered.

1 - Hardly Any Skill. Many coordination breakdowns occurred and members could not seem to effectively combine their collective contributions. Meetings were missed or rushed to conclusion. Sometimes decisions were submitted without the benefit of everyone's input.

Affect Management

Definition: Regulating member emotions during work including (but not limited to) social cohesion, frustration, and excitement.

Examples:
-Team members try to cheer up each other when needed
-The members recognize quickly when someone is angry or unhappy
-The members support each other if someone has a non-work problem
-Relationships between members of the team are positive and rewarding

Using the scale provided below, please select a response that best describes your team's affect management. If you cannot decide between two choices, please select the one in-between.

5 - Complete Skill. Team members supported each other emotionally; members tried to regulate the emotions of the team and to maintain cohesion and a level plain of emotions.

3 - Adequate Skill. Team members supported each other emotionally but sometimes things deteriorated. They spent undue (or not enough) amount of time dealing with interpersonal and emotional problems.

1 - Hardly Any Skill. Team members were very apathetic about the task and about the team. Meetings and work were not enjoyed and seen as "something else that they had to do." If given the options, members would have walked away from the entire experience.

Conflict Management

Definition: Establishing conditions to prevent, control, or guide team conflict before it occurs. Working through task, interpersonal, and process disagreements between team members.

Examples:
-Team members work through task-based conflict and are open to alternative ideas
-Members agree upon how they will work or otherwise minimize process-based conflicts
-Rules are established in dealing with interpersonal conflict
-Preventative conflict measures are stressed among members

Using the scale provided below, please select a response that best describes your team's conflict management process. If you cannot decide between two choices, please select the one in-between.

5 - Complete Skill. Team members openly discussed different approaches and strategies without letting things get personal. They agreed upon ways to operate and took measures to minimize interpersonal conflicts. If interpersonal conflicts developed, they dealt with them quickly and effectively.

3 - Adequate Skill. Team members were willing to discuss different approaches and strategies with relatively little ill feelings developing. While there were some disagreements about how the team should proceed, consensus was eventually reached. While some interpersonal conflict existed, it did not undermine the team efforts.

1 - Hardly Any Skill. The team experienced a great deal of conflict. Even task-based disagreements deteriorated and began to get personal. It seemed like more time was spent eliminating conflict than actually working.

Motivating and Confidence Building

Definition: Generating and preserving a sense of collective confidence, motivation, and task-based cohesion with regard to mission accomplishment.

Examples:
-Members are really motivated to work hard and to do well
-When faced with adversity, the team really rallies together and works harder
-Team members have a shared sense that they can be successful.

 Using the scale provided below, please select a response that best describes your team's motivating and confidence building processes. If you cannot decide between two choices, please select the one in-between.

5 - Complete Skill. Team members were highly motivated, shared a sense of confidence, and believed that they would be successful. Adversity brought out the best in the team and they were motivated to do well and to continually improve.

3 - Adequate Skill. Team members were motivated to do well. They believed that they could "hold their own" and did not fold in the face of adversity.

1 - Hardly Any Skill. Confidence was low in the team and people seemed to be "going through the motions." When faced with adversity, the team members started to give up and believed that they could not recover.

APPENDIX B

Sample Grading Points and Grading Scale for Team Performance

Sample Grading Points and Grading Scale for Team Performance

Question 1a:
While students often think of pay as the main driver of motivation and satisfaction, research shows the work itself to be a crucial factor as well. Job Characteristics Theory can be a great guide for developing jobs which provide their own motivation and satisfaction for employees. The five job characteristics are different for each job, and no position is likely to be high on all five dimensions, so it's a mistake to try to shoehorn everything into every job. It is best instead to align the job characteristics to the strategic plan the company has for that position, in hopes of providing maximum motivation possible while still maintaining proper control over expenditures and employee behavior.

- 1a. Identify and describe in your own words each of the five core job characteristics in Job Characteristics Theory. For each job characteristic, describe a different job (none of these should be your focal job, you'll answer questions on your focal job later) that is either high or low on that job characteristic. These jobs do not have to come from your particular company, they should just be examples of jobs which fit these characteristics.

  WE ARE SPECIFICALLY LOOKING FOR YOU TO DESCRIBE FIVE (5) DIFFERENT JOBS THAT ARE NOT YOUR FOCAL JOB. WE WANT THREE (3) OF THEM TO BE **LOW** ON THE CHARACTERISTIC YOU ARE DESCRIBING AND TWO (2) TO BE **HIGH** ON THE CHARACTERISTIC YOU ARE DESCRIBING. BE SURE TO DESCRIBE A DIFFERENT JOB FOR EACH CHARACTERISTIC.

Grading Points for 1a:

- *The team needs to define each of the five job characteristics listed below, in their own words. They do not have to be in any particular order, but the team does need to define them as part of the answer:*
  - *Variety: having many different types of tasks performed as part of the job so that you are not doing the same thing all the time*
  - *Identity: being able to see the job through to completion so that you can see the results of your labor*
  - *Significance: having an effect on the lives of other people, having your job be important to other people's lives*
  - *Autonomy: being able to choose what tasks you will perform and when you will perform them, so that you have control over your activities on the job*
  - *Feedback: receiving information on how you are performing directly from the activities you are completing on the job (NOT from managers, peers, or customers, but from the job itself; so, a car mechanic is able to see and hear how well the car is running as a result of his or her work)*
- *The team needs to provide an example job for each of the five characteristics, and then indicate whether that job is high or low on that characteristic. They also must explain why they believe the job is high or low in that characteristic.*

Written Assignment Grading Scale:

   7 – Excellent work! The team has covered all of the grading points, and does a good job of explaining why they answered as they did.

   6

   5 – Good work. The team covered most of the grading points, but sometimes did not do a good job of explaining their reasoning.

   4

   3 – Below average work. The team did not do a good job of explaining the choices they made, and missed some of the grading points.

   2

   1 – Poor work! The team did not seem to understand what was required from the assignment, often not covering the grading points.

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