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Effectiveness of Exceeding Expectations and Demonstration of Concerns for Repairing Trust in Collaborative Relationships

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by

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Abstract

Title:
Effectiveness of Exceeding Expectations and Demonstration of Concerns for Repairing Trust in Collaborative Relationships

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Interpersonal trust in collaborative relationships has been found to lead to positive outcomes, such as satisfaction, perceived leadership effectiveness, teamwork, and successful organizational change (Fulmer & Gelfand, 2012). However, trust can decline naturally or can be broken due to unmet expectations as trust involves expectations of positive intentions from another individual or positive outcomes from the relationship (Bhattacharya, Devinney, & Pillutla, 1998). In order to continue and achieve successful collaboration, trust must be repaired using different trust repair strategies such as providing apology or denying the responsibility. The current research examines exceeding expectations and demonstration of concerns as two understudied but potentially effective trust repair strategies. Study 1 used archival survey data from an employee sample to compare the perceived effectiveness of exceeding expectations and demonstration of concerns to that of other trust repair strategies. Study 1 also explored affective reactions as a mediator that explains why the two repair strategies increase trust,

and workplace friendship and individually-held values as moderators that explain when the trust repair strategies will be effective.

Study 2 used archival data from an experiment to further establish internal validity of the two repair strategies and test their causal relationships with the same mediators and moderators but with different outcomes, such as information sharing and willingness to work together again. Main results showed that apology, account, exceeding expectations, and demonstration of concerns were prevalent and effective trust repair strategies, but affect was not a significant mediator. As individuals experienced trust development, violation, and repair, curvilinear trajectories (increase, decrease, and increase) of trust and information sharing over time were also found. The current research calls for more research on exceeding expectations and demonstration of concerns and their use and effectiveness especially when used in combination with apology and account.

Keywords: trust, trust violation, trust repair, collaborative relationships

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CHAPTER ONE

INTRODUCTION

Decades of research have shown that trust is the foundation of all types of relationships as well as fundamental in successful collaboration at the workplace (Fulmer & Gelfand, 2012). Trust involves not only the willingness to be vulnerable to another individual, but also having expectations of positive outcomes, intentions, and feelings regarding another individual and the relationship (Rousseau, Sitkin, Burt, & Cramerer, 1998). Although it sounds intuitive and easy that trust is important in successful relationships and collaboration, trust can decrease naturally over time, or can be broken and never returns to the same level or nature as before (Elangovan, Auer-Rizzi, & Szabo, 2015). Therefore, it is important to understand how individuals can maintain their trust with others, and when it is broken, how to repair the broken trust. This is because the consequences of trust violation can vary from relatively trivial (e.g., no longer having contact) to moderate (e.g., being less open and sharing less information which can derail the success of collaborative work) and severe (e.g., retaliation, revenge, and obstruction; Bies & Tripp, 1996; Elangovan et al., 2015). Thus, individuals need to not only reduce these negative consequences from trust violations, but also increase trust again and rebuild positive and successful relationships by engaging in trust repair in order to achieve desirable work outcomes (e.g., satisfaction, performance, and organizational effectiveness; Colquitt, Scott, & LePine, 2007; Fulmer & Gelfand, 2012).

In order to repair trust, individuals use different trust repair strategies, which are behaviors that can rebuild trust with the trustor, continue the relationship, and achieve effective collaboration (Kim, Ferrin, Cooper, & Dirks, 2004). Most of the literature on trust repair at the individual level has studied such trust repair strategies as apology, providing a reason or explanation, providing financial compensation, denial, and silence or reticence (Lewicki & Brinsfield, 2017). In addition to these commonly studied repair strategies, Nyein, Wildman, and Petersen (revise & resubmit) introduced two understudied trust repair strategies, exceeding expectations in terms of collaborative work and demonstration of concerns, that were found to be more commonly used and potentially more effective in trust repair than other repair strategies that have been studied in the literature.

Exceeding expectations involves putting in extra effort for the collaborative work and exceeding initial expectations in terms of performance (Nyein et al., revise & resubmit). By exceeding expectations, the violator shows that he or she is willing to take responsibility for the violation and its consequences, and is also committed to putting in effort for the success of the collaborative work. The violator attempts to reduce negative consequences from the violation as well as reestablish positive intentions and expectations. Demonstration of concerns involves showing benevolence towards the trustor, such as showing care, kindness, gratitude, and consideration, and keeping the trustor's best interests in mind.

Through demonstration of concerns, the violator appeals to the social and emotional experiences of the trustor by reducing negative emotions from the violation and improving positive interactions. Although demonstration of concerns does not directly impact the collaborative work, it improves positive intentions and willingness to work together again.

The current research involves two studies as follow-up to Nyein and colleagues' study and further examines the effectiveness of exceeding expectations and demonstration of concerns as trust repair strategies. Specifically, Study 1 aims to examine the perceived effectiveness of these two repair strategies compared with that of other repair strategies by administering a survey to a culturally diverse employee sample composed of U.S. citizens and expatriates living in the U.S.. Study 2 aims to establish internal validity of the two repair strategies and test their causal relationships with different outcomes through an experiment using a collaborative game called Colored Trails. In addition, both studies examine affective reactions to trust violation and repair as the mechanisms through which the two repair strategies affect the outcomes. They also examine additional contextual factors (e.g., friendship status, basic values individuals have in life) to further understand different effects of the two repair strategies.

The contributions of the current research to the science of trust violation and repair in collaborative relationships are threefold. First, this research highlights theoretical contributions of exceeding expectations and demonstration of concerns

as understudied but potentially more effective trust repair strategies by comparing and contrasting with other repair strategies and by establishing them as distinct from other similar constructs (e.g., organizational citizenship behavior and prosocial behavior). Second, the current research examines why and when the two repair strategies are effective across different outcomes to further understand the dynamic nature of trust repair. Third, the current research empirically tests the generalizability as well as internal validity of the two repair strategies in collaborative relationships. Therefore, individuals can practically use them in the real world, supported by science, to successfully increase trust, improve the relationship and interaction with the trustor, and achieve desirable outcomes for the collaboration.

CHAPTER TWO

LITERATURE REVIEW

Trust Development

One of the most commonly cited and widely supported models of trust development is Mayer, Davis, and Schoorman's (1995) model which describes that the trustee's trustworthiness is evaluated based on perceptions of his or her ability, integrity, and benevolence. Ability is concerned with the competence to perform the tasks. Integrity is concerned with adhering to moral and ethical principles (e.g., not lying). Benevolence is concerned with being unselfish and having the best interest of the trustor. When the trustee is perceived to be trustworthy, trust is developed. The trustor's propensity to trust also influences the trustee's trustworthiness such that when the trustor has a high propensity to trust, the trustee is more likely to be perceived as trustworthy, leading to high trust. Ability, benevolence, and integrity are related to each other but are distinct constructs as they have been found to be uniquely related to trust (Colquitt et al., 2007). Once trust is developed, the trustor is willing to become vulnerable and take risks in the relationship, eventually leading to favorable outcomes. In addition to their relationships with outcomes via trust, ability, benevolence, and integrity also directly affect other outcomes, such as risk-taking, citizenship behaviors, and counterproductive behaviors (Colquitt et al., 2007).

To further support Mayer and colleagues' (1995) model, Webber (2008) introduces cognitive and affective sources of trust. Cognitive trust is a positive belief about the trustee's trustworthiness, whereas affective trust concerns with emotional bond between the trustor and trustee. In other words, cognitive trust reflects the trustee's ability and integrity, whereas affective trust reflects the trustee's benevolence. Moreover, trust has been found to be one-dimensional at the beginning of collaboration, and only cognitive trust exists initially (Webber, 2008). Over time, trust emerges as two-dimensional, and both cognitive and affective trust exist later in the collaboration as they have different antecedents and outcomes (Webber, 2008). For example, being reliable was found to predict cognitive trust, whereas citizenship behaviors were found to predict affective trust, supporting trust as two-dimensional (Webber, 2008). Thus, it has an important implication for trust repair such that as trust involves both cognitive and affective components, trust repair effort needs to address both components in order to successfully repair the broken trust.

Trust development can also be understood through the social exchange theory which describes that social interactions and behaviors are based on negotiation and reciprocation between individuals (Blau, 1964). Compared to negotiated exchanges, reciprocal trust is a dynamic, ongoing process where the trustor and trustee reciprocally show trustworthy behaviors and non-behavioral cues. Similarly, the transformational approach explains trust development while

considering the role of time in how trust develops and evolves over time (Lewicki & Bunker, 1996). According to the transformational approach, there are three types of trust: calculus-based, knowledge-based, and identification-based trust. Calculus-based trust is developed based on cost and benefit analysis of trusting the trustee and risks in the relationship. Knowledge-based trust is developed when the trustor can predict the trustee's behaviors after consistently interacting with the trustee and being familiar enough. Identification-based trust is developed based on the mutual understanding and identification of each other through which decisions are made in the best interest of both parties, and trust is maintained.

These three types of trust build upon each other and develop sequentially from calculus-based trust to knowledge-based trust and then identification-based trust, as the trustor and trustee spend more time and interact more. The transformational approach also separates trust in working collaborative relationships from trust in intimate or personal relationships such that calculus-based and knowledge-based trust are more likely to exist in working collaborative relationships than identification-based trust (Lewicki, Tomlinson, & Gillespie, 2006). Therefore, the current research focuses only on collaborative relationships between individuals and examines trust dynamics in such relationships where individuals must interact and depend on each other to perform some types of tasks, and there is at least one higher-level goal they have to achieve within a timeline. There are also consequences associated with their performance and achieving the

goal. The current research does not examine trust in personal or intimate relationships (e.g., van de Rijt & Buskens, 2006), swift trust (e.g., Wildman et al., 2012), trust in leadership or top management (e.g., Dirks & Ferrin, 2002), trust in organizations (e.g., Gillespie & Dietz, 2009), online trust or consumer trust (e.g., Bansal & Zahedi, 2015), and any other relationships that are not collaborative and interdependent as previously defined (e.g., buyer-seller relationship; Hill, Eckerd, Wilson, & Greer, 2009).

Trust Violation

Despite the best effort and intention to maintain trust, trust can be broken or can decrease naturally over time (Elangovan et al., 2015). Trust violation is generally conceptualized as a two-step process in which in the first step, there is a triggering event where the violator does something that does not meet the positive expectations that the trustor has on the violator or that shows negative or non-positive intentions towards the trustor (Kim et al., 2004). In the second step, the trustor assesses the violation situation and the consequences, and attributes the causes and responsibility of the violation (Kim et al., 2004). Attribution of the violation is based on three trustworthiness dimensions, ability, integrity, and benevolence, from Mayer and colleagues' (1995) model. Competence violation occurs when the trustor attributes the violation to the violator's lack of ability (Kim et al., 2004). In other words, the violator might try to perform tasks well but could not do so due to the lack of ability ("tried but couldn't" attribution; Elangovan,

Auer-Rizzi, and Szabo, 2007). Integrity violation occurs when the trustor attributes the violation to breaking the norms or expectations of integrity or benevolence; for instance, the violator cheated in an exam or took credit for the trustor's work (Kim et al., 2004). Another example is that the violator did not contribute in a group project (i.e., being selfish), and the trustor had to do more work to compensate for that ("didn't want to" attribution; Elangovan et al., 2007).

The type of violation matters because it has important implications for consequences of the violation and for the trust repair process. According to social role theory, men are expected to be agentic (e.g., assertive, confident, goal-oriented), whereas women are expected to be communal (e.g., warm, caring, relationship-oriented). It has been theoretically proposed that it will be more difficult for men to repair trust after competence violation because men are expected to be performance-oriented and successful, and competence violation breaks such societal norms and expectations (Frawley & Harrison, 2016). On the other hand, it will be more difficult for women to repair trust after integrity violation because integrity is interpersonally oriented (e.g., not putting one's interests above others'), hence being congruent with communal role expected of women (Frawley & Harrison, 2016). Therefore, which type of trust violation is difficult to repair may depend on the gender of the violator.

In addition, competence violation is less damaging to trust and the relationship than integrity violation because the violator can still improve in the

future, and the violation is not intentional (Elangovan et al., 2007; Lewicki & Brinsfield, 2017). On the other hand, integrity violation is more harmful and troubling because it is intentional to some extent, and there is a negative connotation associated with low or lack of integrity (Elangovan et al., 2007). Regardless of whether integrity violation happens between individuals at the same organizational level (e.g., between coworkers), at different levels (e.g., between a supervisor and employee), or via a third party (e.g., through a mutual colleague), it is still more damaging than competence violation. For example, in the study of Schweitzer, Hershey, and Bradlow (2006), when participants experienced deception from their partner in a trust game, who promised to share the money but did not share, trust was never recovered. A slightest hint of deception even through a third party could also result in less trusting regardless of the source or its reliability (Bozoyan & Vogt, 2016).

Similarly, in their grounded theory study, Grover and colleagues (2014) found two types of trust violation in leader-follower dyadic relationships: recoverable and irrecoverable trust violations. In recoverable trust violation, the intensity of violation was low, and there were willingness and possibility to repair trust. Some examples of the events leading to trust violation experienced by the followers were the lack of leaders' competence, little legitimacy of the leaders, the lack of feedback giving, micromanaging, and changing followers' work without asking them. These behaviors were more task-oriented and concerned with the

leaders' ability and competence (i.e., competence violation). On the other hand, in irrecoverable trust violation, the intensity of violation was high, and a single violation could harm trust completely, making it impossible to repair it. Some examples of the triggering events included abusing power (e.g., showing favoritism), talking bad about the followers behind their back, and blaming the followers. These behaviors were more relationship-oriented and concerned with the leaders' integrity and benevolence (i.e., integrity violation). When the leaders engaged in irrecoverable trust violation, the followers reported low job satisfaction, organizational commitment, withdrawal from work, turnover intentions, and job search behaviors. All in all, integrity violation is more harmful and leads to more negative consequences than competence violation.

Trust Repair

When trust is violated, and if the trustor and violator must or want to continue the relationship and collaboration, they need to engage in trust repair process. Trust repair is qualitatively and quantitatively different from trust building such that the violator needs to not only increase the amount of trust and enhance the trustor's positive expectations and intentions towards the violator, but also reduce or dispel the negative emotions (e.g., hurt and anger) and consequences from the violation (Kim et al., 2004). Previous research has studied the effectiveness of different trust repair strategies, which are activities or ways to repair the broken trust by making the trustor's beliefs and intentions towards the violator positive

again (Kim et al., 2004). The most commonly studied trust repair strategies at the individual and team levels in the literature have been providing apology, reason or explanation, financial compensation, denial, reticence, and relational concerns (Lewicki & Brinsfield, 2017).

Apology and Denial. Apology involves a statement of acknowledging the violation and showing regret (Kim et al., 2004). By apologizing, the violator takes responsibility and shows vulnerability which is consistent with how trust is developed based on the Mayer and colleagues' (1995) model and which helps rebuild the trust. On the other hand, denial is the opposite of apology and involves denying the violation to be true and not showing regret nor taking responsibility. Apology was found to be effective in repairing competence violation but not denial (Kim et al., 2004). Apology shows that the violator is willing to take responsibility of the violation and also willing not to repeat it in the future. Moreover, apology when delivered in a respectful manner could also improve the perception of procedural justice that the decision about the triggering event of trust violation was made fairly (De Cremer & Schouten, 2008). This is because apology delivered in a respectful manner made the trustor feel valued and appreciated (De Cremer & Schouten, 2008). On the other hand, denial was found to be effective in repairing integrity violation because it is better not to be associated with integrity violation due to its negative connotation, and if the violation is declared to be untrue, the trustor might give the violator the benefit of the doubt (Kim et al., 2004).

Furthermore, the violator could apologize for integrity violation instead of denying, but it was more effective in repairing trust if the violator apologized and attributed the integrity violation to external or situational factors than to internal or dispositional factors (Kim et al., 2006). Interestingly, when the violator denied about integrity violation but responded with empathy, he or she was perceived to have high integrity (Bagdasarov, Connelly, & Johnson, 2019). However, the trustor was not willing to take risks in the relationship, for example, by letting the violator work on important tasks (Bagdasarov et al., 2019). In fact, denial in response to integrity violation without empathy resulted in the highest negative affective reactions, especially when the violation had consequences personal to the trustor (e.g., not getting well-deserved promotion; Bagdasarov et al., 2019). This also shows that addressing some of the affective or relational components within trust repair is important and makes trust repair more successful.

Reticence. In addition to apology and denial, another trust repair strategy is reticence (i.e., neither denying nor confirming the violation act), and it can be used for various reasons (Ferrin, Kim, Cooper, and Dirks, 2007). The violator might think that without any evidence of guilt, it is better to leave the violation uncertain so that the trustor might give the benefit of the doubt. The violation might also involve other individuals or personal and confidential information that the violator is trying to protect. In this case, it is better not to confirm or deny anything. However, it was found that compared to apology and denial, reticence was not

effective for repairing trust after either competence or integrity violations (Ferrin et al., 2007).

Account. Unlike apology, account involves providing an explanation or reason for the violation in order to reduce culpability, and is less affective in nature as apology involves statements of affect such as guilt and remorse (Lewicki & Brinsfield, 2017; Ren & Gray, 2009). Previous studies of account have focused on its characteristics and interactions with contextual factors that impact the effectiveness of an account in trust repair. For example, when individuals received bad news or were in an unfortunate situation (e.g., getting rejected for a job or having conflicts), an explanation was considered adequate or satisfactory if it had specific content tailored towards the recipient, which was perceived as being sensitive and sincere, and when the outcome was not severe (Shapiro, Buttner, & Barry, 1994). Moreover, the perception of sincerity in an explanation was enhanced when delivered verbally rather than in writing (Shapiro et al., 1994).

Furthermore, an explanation was effective in reducing negative reactions (e.g., retaliation) if it had instrumental implications in human resources decision (e.g., hiring and being laid off), relational implications (e.g., inclusion in a group), and moral outcomes (e.g., making things right; Shaw, Wild, & Colquitt, 2003). Therefore, in situations where trust violation and its negative consequences (e.g., lawsuit) are likely, an account with specific substance while considering different

contextual factors can be beneficial in preventing trust violation and its consequences.

Compensation. Another trust repair strategy, providing compensation, can also be effective in repairing trust. In the study of Desmet, Cremer, and van Dijk (2010), participants played multiple rounds of an investment game using actual money with a confederate. Trust was violated when the confederate did not share the money with the participants. Subsequently, the confederate either voluntarily offered extra money as compensation for trust violation or was pressured by the experimenter to do so. The results showed that when compensation was offered voluntarily, trust was improved especially for those with low trait forgiveness (i.e., one's stable tendency to forgive others). On the other hand, for those with high trait forgiveness, whether the compensation was offered voluntarily or involuntarily did not matter in their decision to trust again.

Moreover, compared with no compensation at all, both small and large amount of financial compensation could improve cooperation and affective reactions after trust violation; however, the results were not different between small and large amount of compensation (Gibson, Bottom, & Murnighan, 1999). What is more, when compensation is used, it is important not to overcompensate as it was found to result in lower level of trust than equal compensation (Haesevoets, Folmer, & Van Hiel, 2014). This is because overcompensation still signals unfairness although the trustor receives more benefits, and individuals prefer equal

outcomes according to fairness theory (Haesevoets et al., 2014). Compared with other trust repair strategies such as apology and explanation, substantive financial compensation was also found to be more effective (Bottom, Gibson, Daniels, & Murnighan, 2002).

In addition to the amount of compensation, consistency in providing penance or in showing trustworthy actions is also important. In the study of Schweitzer and colleagues (2006), participants played several rounds of a trust game where they started with $6 and could choose the amount of money to keep for themselves and give to their partner in the game. If they decided to give all $6 to their partner, the money would be tripled ($18). Then, their partner could decide how much money to give back to the participants. After their partner violated their trust by not sharing $18, a promise to change from their partner helped recover initial trust but not in the long term. Trustworthy actions (i.e., sharing $18 consistently in the following rounds of the game) was effective in repairing trust regardless of whether the violator promised to change or not. All in all, compensation in some forms (e.g., money, penalty, or loss to the violator) and amounts can be helpful in repairing the broken trust. More importantly, actions, especially consistent trustworthy actions, matter more, and compensation can be more effective than apology and account particularly in negotiation or economic exchange situations.

Demonstration of Concerns. A relatively understudied trust repair strategy is demonstration of concerns. Theoretically discussed by Ren and Gray (2009), demonstration of concerns is the violator showing care, concerns, and benevolence towards the trustor after trust is violated. There has been some research examining trust repair attempting to improve the relational aspects in the process. For example, Okimoto and Tyler (2007) examined the effectiveness of financial compensation and showing relational concerns after trust was violated. It was a vignette-based study where a university's housing administration (violator) made a mistake, making three students (trustor) lose $200 in three separate cases (e.g., late checkout fee due to misinformation given by a housing employee). A representative of the university offered these students financial compensation and showed relational concerns, such as showing respect towards the trustor, valuing the trustor's opinions and voice, as well as hearing grievances. The results showed that financial compensation combined with relational concerns was more effective in improving the perception of procedural justice and reactions towards the violator than compensation alone, because the repair strategies increased the perception of being valued and being in good standing in the group. In addition, showing relational concerns alone was also effective in improving the perception of procedural justice regardless of whether financial compensation was provided or not. Therefore, improving relational aspects after trust is violated also sounds a promising strategy to repair trust.

Table 1. *A Summary of Representative Literature on Trust Repair Strategies*

Trust Repair Strategy	Theoretical Definition	Operationalized Definition	Key Findings	Citation
Apology	A statement of acknowledging responsibility for violation and regret	Admitting responsibility for violation, apologizing, and saying it would not happen again in vignette-based study	Effective for competence violation	Kim et al. (2004)
Apology	A statement of accepting responsibility for violation and its consequences but make no actions to reduce the negativity	3-item survey measure of employees' perception of whether their supervisor was someone who apologized when things went wrong	Improved perception of procedural justice when delivered respectfully	De Cremer & Schouten (2008)
Apology	A statement of acknowledging responsibility for violation and regret	Admitting full or partial responsibility for violation in vignette-based study	Effective for competence violation and for integrity violation when attributed violation to external factors	Kim et al. (2006)

Apology	A statement of acknowledging responsibility for violation and regret	Admitting full responsibility for the violation, saying it would not happen again, and the trustor would not have to worry about potential violation in vignette-based study	Effective for competence violation and more difficult to repair trust when in a group than with individuals	Kim et al. (2013)
Reticence	A statement of not confirming or disconfirming the allegation	Explaining that the situation was complex, information should remain confidential, and the trustor would not have to worry about potential violation in vignette-based study	Ineffective	Ferrin et al. (2007)
Denial	A statement of acknowledging no responsibility for violation and no regret	Denying responsibility for violation, attributing it to external factor, and saying the trustor would not have to worry about potential violation in vignette-based study	Effective for integrity violation	Kim et al. (2004)
Explanation	Explanation to improve procedural fairness and decision outcomes	Explanation for rejection decision after a job	Effective when it included specific	Shapiro et al. (1994)

		interview in vignette-based study	content, was sincere, and not severe outcome	
Compensation	Financial compensation in the context of economic exchange or decision making	Actual money in a trust game in an experimental study	Effective when offered voluntarily and for those with low trait forgiveness	Desmet et al. (2008)
Penance	Fixed financial payment or the violator's penalty, suffering, or cost that equals the trustor's	Points in prisoner's dilemma scenario which determined the chance to win additional $10 in an experimental study	Both small and large amount of penance offer were effective, and substantive penance was more effective than apology and explanation.	Bottom et al. (2002); Gibson et al. (1999)
Compensation	Financial compensation in the context of economic exchange or decision making	Actual money in a resource allocation task in an experimental study	Compensation was effective, but overcompensation was not.	Haesevoets et al. (2014)
Compensation	Financial compensation in the context of negotiation or bargaining	Chips (each worth 5 Euro cents) in a resource allocation game in an experimental study	Effective when violation was framed as a loss for the trustor	De Cremer (2010)
Compensation	Compensation to restore equity and fairness based on fairness theory	Financial compensation in a settlement scenario with a student and university in a vignette study	Compensation combined with relational concerns was more effective than compensation alone.	Okimoto and Tyler (2007)

Consistent Trustworthy Actions	Showing trustworthy behaviors over time	Sharing money over 7 rounds of a trust game in an experimental study	Effective regardless of whether they were accompanied by a promise to change or not	Schweitzer et al. (2006)
Relational Concerns	Showing relational concerns for the trustor and addressing the violation in a sensitive way	Showing respect towards the trustor, valuing the trustor's opinions and voice, as well as hearing grievances in a settlement scenario with a student and university in a vignette study	Effective regardless of whether they were used with compensation or not	Okimoto & Tyler (2007)

Contextual Factors

Apology and Denial. The effectiveness of these trust repair strategies depends on a number of contextual factors, as they can facilitate or hinder the trust repair process. In repairing trust using apology and denial, the existence of any evidence whether or not the violator truly committed the violation played a role in their effectiveness. Given an evidence that the violator did not commit the violation, trust repair was found to be more effective if the violator denied the violation in the first place (Kim et al., 2004). On the other hand, given an evidence that the violator committed the violation, trust repair was more effective if the violator apologized (Kim et al., 2004). If the trust repair strategies used did not match with the evidence (i.e., denial when there was an evidence of guilt and apology when there was an evidence of innocence), it showed that the violator was lying in both situations, which in and of itself is an integrity violation. In these cases, it exacerbated the initial violation, and trust repair effort was not successful.

Another contextual factor is whether trust violation and repair happen with another individual or with a group. Consistent with the previous findings (Kim et al., 2004; 2006), when the types of violation and repair strategy matched (e.g., apology for competence violation), groups reported more trusting of the violator (Kim, Cooper, Dirks, & Ferrin, 2013). When the types did not match (e.g., apology for integrity violation), groups were less trusting of the violator (Kim et al., 2013). As expected, it was also more difficult to repair trust with a group than with

another individual (Kim et al., 2013). In a group setting, there is a cognitive bias called groupthink in which members seek consensus in the group and follow the group decision regardless of how irrational or wrong the decision is. When individuals had to report their own post-violation trust before reporting it as a group, it was found that their level of trust reported individually was significantly altered by the group's trust or lack of trust (Kim et al., 2013). On the other hand, the group's trust was less likely to be altered by individual members' trust or lack of trust (Kim et al., 2013). Therefore, the effectiveness of apology and denial in repairing trust depends on type of violation, existence of evidence regarding whether the violation truly happened, and whether trust repair strategies are used with individuals or groups.

Apology and Compensation. The effectiveness of apology and compensation depends on the type of trust between the trustor and violator (calculus-based vs. relational trust). Calculus-based trust is based on costs and benefits of exchange with the goal of maximizing the benefits for oneself. Therefore, competence and integrity of the trustee are more salient in calculus-based trust (Öztürk & Noorderhaven, 2018). On the other hand, relational trust is based on socio-emotional exchange, shared values, and interconnectedness. Therefore, benevolence of the trustee is more salient in relational trust (Öztürk & Noorderhaven, 2018). It has been proposed that apology with compensation can be more effective in repairing calculus-based trust following integrity violation as

compensation is less affective and more economic in nature (Öztürk & Noorderhaven, 2018). Apology with empathy might be more effective in repairing relational trust following integrity violation (Öztürk & Noorderhaven, 2018).

In further comparing the effectiveness of apology and compensation in repairing trust, how the trust violation is framed also plays a role. In the study of De Cremer (2010), when trust violation was framed as a gain for the trustor, the violator allocated 70 coins out of 100 to himself and 30 coins to the trustor. When trust violation was framed as a loss for the trustor, the violator paid 30 coins (leaving 70 coins for himself), and the trustor paid 70 coins (leaving 30 coins for himself). Although the outcomes in both scenarios were the same (i.e., the violator getting 70 coins and the trustor getting 30 coins), when the violation was framed as a loss for the trustor, compensation was more effective in repairing trust in order to gain equal financial outcomes (De Cremer, 2010). However, when the violation was framed as a gain for the trustor, apology was more effective (De Cremer, 2010). Therefore, it is important to consider contextual factors, such as individual characteristics, type of trust, and how the violation is framed, in choosing whether apology or compensation will be more effective in repairing trust.

Power Dynamics. When there are power dynamics involved in the trustor-violator relationship, the trust repair process is different especially when the violator is the one in the higher status or power (Nyein et al., revise & resubmit). Due to the power distance in the relationship, trust repair was found to be initiated

by followers even when leaders were the ones to violate followers' trust (Grover et al., 2014). If the leaders committed competence violation (e.g., micromanaging and changing the followers' work without asking them), and trust was still recoverable, followers attempted to interpret the violation as misunderstandings and clarify expectations in order to perform well in their jobs. This attempt included improving the relationships (e.g., increasing effort in their jobs) and including the leaders in the relationships (e.g., asking for feedback and instructions; Grover et al., 2014).

As a result of trust violation, followers felt uncertain, fearful, and vulnerable as they needed to continue relying on their leaders for employment and resources. Therefore, it was equally important for leaders to be involved in the trust repair process. Some effective ways for the leaders to engage in trust repair were self-reflection on the violation by asking the followers feedback as well as providing reassurance and plans to restore trust and not to repeat the violation (Grover et al., 2014). Those plans included clarifying expectations, providing both positive and negative feedback, and increasing their support and availability to the followers (Grover et al., 2014). All in all, power dynamics in the relationship plays a role in how trust can be repaired compared to other contexts.

Other Contextual Factors. There are other contextual factors that influence the effects of trust repair effort on different outcomes. These factors include timeliness of the trust repair, sincerity of the violator, severity and intentionality of the violation, and the possibility of future violations. Previous

research has shown that trust repair is more likely to be successful when the violation is not severe and not intentional (Tomlinson, Dineen, & Lewicki, 2004; Lewicki & Brinsfield, 2017). Moreover, trust repair is more likely to be effective when the violator engages in trust repair in a timely manner, shows sincerity in trust repair efforts, and shows intention not to repeat the violation. All of these behaviors indicate that the violator takes responsibility, and there is also less likelihood of future violations (Haesevoets et al., 2016; Tomlinson et al., 2004).

Moreover, when both parties are committed to the relationship and intend to stay in the relationship even after the violation, the trustor is likely to forgive the violator and continue the relationship (Finkel, Rusbult, Kumashiro, & Hannon, 2002). Last, but not least, if the trustor realizes the long-term benefits of continuing the relationship as well as has a broader perspective on the violation, he or she is more likely to forgive the violator (Mok & Cremer, 2015). This is because the trustor sees factors outside of the violator's control contributing to the violation, he or she is less likely to put the blame on the violator and to reframe the violation event in a more positive way. Taken together, in order for trust repair effort to be successful, both trust repair strategies and contextual factors need to be taken into consideration.

Limitations of Previous Research

The majority of the literature on trust violation and repair is limited to using hypothetical scenarios in a written format, negotiation-based games, and economic

decision making games (e.g., trust game, Prisoner's dilemma) in a controlled laboratory setting (e.g., Charness, Du, & Yang, 2010; Desmet et al., 2010; Kataria, & Winter, 2013; Zarolia, Weisbuch, & McRae, 2017). Although these experimental designs maximize internal validity by directly manipulating the trust repair strategies, they do not always capture the dynamic nature of the trust repair process and relationship between the trustor and violator. In order to improve upon previous research, the study of Nyein and colleagues prior to the current research used critical-incident based, semi-structured interviews and focused specifically on collaborative relationships in which individuals depended on each other and exchanged information and expertise to complete tasks and higher-level goals within a timeline. The interview method allowed for the capture of a wide range of trust repair experiences that better reflect real-world collaborative contexts. The interview questions asked participants to recall their trust-related experiences in collaborative relationships and their cognitive and affective reactions. The interviews were then transcribed and coded by two subject matter experts.

Based on the results, the study identified two trust repair strategies in particular that appeared to be more common within interdependent, collaborative relationships in the real world, that were subjectively perceived as effective in repairing trust: (a) penance in the form of exceeding expectations in collaborative work and (b) demonstration of concerns towards the trustor. Compared with other repair strategies, they were also more commonly used by themselves or in

combination with other repair strategies based on frequency counts. Moreover, participants were asked about successful trust repair experiences, and therefore, trust repair strategies in the critical incidents they shared were considered effective in repairing trust. An example of exceeding expectations was the violator completing the entire project by him- or herself to compensate for the lack of prior contribution:

> He started putting in more work and started exceeding expectations in what he was doing. He just became more reliable after that experience.
>
> When we're redoing that presentation the second time, she told us… 'You guys don't need to do anything, I would like cover the whole thing.' Another member and I felt she was very responsible for her mistake.

An example of demonstration of concerns was the violator showing gratitude for the trustor's more contribution to the project:

> They appreciated all of the work that I put in. They appreciated the fact that I did like three or four things that I didn't have to do. That was a really good thing. They were like, 'Thank you so much for doing this.'… I was very cool with all of this. I didn't mind having to do a bit of extra work. Honestly, it just made me feel a bit better that I was actually putting in work.

Theoretically, the published literature has mostly studied penance or compensation in the context of negotiation and economic transactions or exchanges, and the aim is to calculate costs and benefits as well as to improve fairness (Table 1). Therefore, in repairing trust, the violator experiences some form of cost, suffering, or penalty in order to make it equal with the trustor's experience

of negative consequences due to the violation. Empirically, previous studies have nearly exclusively operationalized penance as financial compensation that the violator offered to the trustor regardless of how they were labelled (Table 1).

Likewise, demonstration of concerns includes being benevolent, nice, and considerate towards the trustor (Nyein et al., revise & resubmit). In the literature, there has been some attempt to examine relational aspects in the trust repair process (e.g., Okimoto & Tyler, 2007; Table 1). However, in the study of Okimoto and Tyler (2007), the one to repair trust was the university or a representative of the university and not the violator him- or herself. Therefore, there was less emphasis on interpersonal interaction but more on the interaction between the organization and individuals, although it acknowledged the importance of addressing relational concerns or components in trust repair.

Taken together, what has been primarily studied in the literature in terms of compensation and relational concerns does not adequately reflect the nature of collaborative relationships as defined in the current research. Many collaborative relationships do not always involve direct financial transaction, exchange, or negotiation. Instead, the core of such relationships is the collaborative work and interdependence of the trustor and violator. Therefore, the current research argues that in collaborative relationships, the trust repair strategies that will be perceived to be the most effective are the ones targeting the collaborative and interdependent nature of the work and relationship. By exceeding expectations, the violator

attempts to substantially improve the collaborative work and achieve goals and positive outcomes. Through demonstration of concerns, the violator aims to improve the social and affective experiences of the trustor which then enhance the interaction and communication between the trustor and violator. Thus, these two repair strategies are potentially more prevalent and effective than other trust repair strategies, but they receive less attention in the literature, hence calling for more research.

CHAPTER THREE

CURRENT RESEARCH

Overview of the Studies

The currently proposed research involves two follow-up studies on Nyein and colleagues' qualitative analysis of interview data to further examine the effectiveness of exceeding expectations and demonstration of concerns as understudied trust repair strategies. Because of the reality-driven qualitative nature of the previous study, it has established the generalizability of these two repair strategies to the real-world collaborative contexts (i.e., ecological validity). Therefore, the overarching goals of the current research are (1) to find additional support for the prevalence and effectiveness of the two repair strategies by conducting a correlational survey-based study using a culturally diverse employee sample of U. S. citizens and expatriates living in the U.S. (Study 1) and (2) to establish internal validity (i.e., approximate truth of inferences of causal relationships between variables) of the two repair strategies by conducting a controlled laboratory-based study using a collaborative game called Colored Trails (Study 2). In addition, to capture the dynamic nature of the trust repair process in collaborative relationships in the real world, the current research also examines the effects of the two repair strategies on different outcomes—both proximal and distal outcomes—and how they interact with contextual factors.

Theoretical Background

As exceeding expectations and demonstration of concerns are understudied trust repair strategies, there is very little to no theory and research within which to embed the hypotheses of the current research. Nonetheless, the current research will review similar concepts and extrapolate relevant information from previous studies that are consistent with the definition, nature, function, motives, and purpose of trust repair. In other words, these repair strategies are expected to increase the amount of trust, improve the relationship and interaction between the trustor and violator, enhance the trustor's positive expectations and intentions towards the violator, increase positive emotions and outcomes, as well as reduce negative emotions and consequences from the violation (Kim et al., 2004; Mayer et al., 1995). Moreover, the current research will also highlight both similarities and differences from similar constructs to theoretically distinguish the two repair strategies as distinct constructs.

Exceeding Expectations

Exceeding expectations involves putting in extra effort for the collaborative work and exceeding initial expectations in collaborative work (Nyein et al., revise & resubmit). Social compensation theory states that in a collaborative environment, when individuals perceive that others are not doing their fair share or expect others to have poor performance, they put in more effort to compensate for others' lack of contribution or poor performance (Buchanan & Russo, 2015). For example, when

individuals perceived that the government failed to meet their environmental responsibilities or expectations of conserving the environment and its resources, they were more willing to engage in environmental conservation behaviors (Buchanan & Russo, 2015). Applying the social compensation theory to trust repair paradigm, when the violator is aware of the violation and realizes that he or she did not meet the trustor's expectation or did not fulfill his or her responsibilities, the violator is likely to put in extra effort to compensate for it.

Naturally, when individuals put in effort for the tasks, they are more likely to complete the tasks, succeed, and achieve excellence. For example, Towns, Cole-Henderson, and Serpell (2001) studied what differentiated students who came from low-income families and were minorities to succeed in urban schools. They found that all stakeholders, including principals, teachers, parents, and students, went above and beyond to help their students succeed. Some of such effort involved extending the curriculum, being creative in providing resources and reducing barriers for students' success, providing supplemental or after-school classes to help struggling students, and students themselves also working extra hard. Thus, when individuals go above and beyond in their effort, they are likely to achieve success and excellence in their work.

In trust repair, when the violator goes above and beyond for the collaborative work with the trustor, they are more likely to accomplish their goals and succeed. So, when seeing the success of their work, the trustor is likely to feel

good about the outcome and recognize the violator's positive intentions, reestablishing the trustor's expectations of positive outcomes from the relationship. What is more, the success of their collaborative work also reduces the negative consequences from the violation (e.g., little progress in a project due to lack of contribution from the violator), helping to repair the broken trust.

To understand who is more likely to go above and beyond, Reade (2003) studied multinational organizations where employees needed to achieve both local and global goals of the organizations. These employees occasionally found it difficult to achieve both local and global goals, as the goals could be in conflict with each other. Therefore, the author studied what drove employees to go above and beyond to achieve both local and global goals for their organizations. It was found that employees who highly identified with the organizations were willing to go above and beyond for them.

Organizational identification is a psychological attachment to an organization, and it provides employees motivation and meaning for their work. Furthermore, as the organization is part of their identity, they work extra hard to maintain a positive image for the organization so that they can also maintain a positive self-image. Applying this to the trust repair paradigm, the violator's exceeding expectations for the trustor and their collaborative work shows that the violator identifies with the relationship with the trustor or their collaborative work. As identification-based trust is the deepest form of trust where individuals

understand each other and make decisions in the mutual interest of each other (Lewicki & Bunker, 1996), the trustor is likely to recognize that the violator is trying to achieve desirable results for both of them. The trustor is also likely to feel good that the violator cares about their relationship to the extent that he or she identifies with it.

Another similar construct to exceeding expectations is organizational citizenship behaviors (OCBs) including in-role effort and extra-role effort at work. OCBs are behaviors that are not required of employees but that positively contribute to the social and psychological environment in an organization. It has been found that OCBs from coworkers influence developing trust in them (Ferrin, Dirks, & Shah, 2006) as it enhances the trustor's positive feelings and expectations towards the trustee. Therefore, when the violator goes above and beyond for the trustor and exceeds expectations, the trustor is likely to appreciate the violator's extra effort in accomplishing the tasks. It is also likely to reestablish the trustor's positive expectations as the violator is willing to go extra miles for trustor and to succeed in the collaborative work.

It is important to note that theoretically, OCBs and exceeding expectations as a trust repair strategy are similar but distinct. OCBs are similar to exceeding expectations in that both exceed what is formally required. However, they are different in a number of ways. First, OCBs can be both task-related (e.g., volunteering for a project) and non-task-related (e.g., helping a coworker), whereas

exceeding expectations is specific to contributing to the tasks (e.g., doing the majority of work in a project). Second, OCBs contribute to the broader social and psychological environment in which task performance occurs, whereas exceeding expectations does not as it is specific to the collaborative work the trustor and violator have to complete. Third, the factors influencing OCBs are different from the purpose and motivation of exceeding expectations as a repair strategy such that individuals engage in OCBs because they might feel obligated to return the support from their supervisors or organizations (Lapierre, 2007), or because they highly identity with their organization and want to maintain a desirable image or identity (Reade, 2003). On the other hand, the motivation behind exceeding expectations in trust repair is to make up for the previous lack of contribution or poor performance that led to trust violation. Finally, in terms of levels of analysis, OCBs can be towards an individual, team, and organization levels, whereas exceeding expectations in trust repair is specifically towards the trustor at the individual level. Therefore, exceeding expectations is distinct from OCBs in terms of its nature, function, motivation, and levels of analysis.

Another similar construct is consistent trustworthy actions in which the violator attempts to restore trust by consistently performing what he or she is supposed to do (Schweitzer et al., 2006). It was found that a promise to change after the violation improved initial trust as it was an indication of positive intentions, but trustworthy actions consistently displayed over time was effective in

the long term regardless of whether they included a promise to change or not (Schweitzer et al., 2006). It is similar to exceeding expectations in that they both are penance and actions shown by the violator to repair trust after the violation. However, the difference is that exceeding expectations is going above and beyond the initial expectations in the collaborative work and not simply meeting the expectations. Trust repair is different from and harder than initial trust development as it not only needs to increase the amount of trust and enhance the trustor's positive expectations, but also reduce the negative emotions and consequences from the violation (Kim et al., 2004). Therefore, once trust is violated, exceeding expectations is more likely to overcome the newly formed negative expectations and affect compared to simply returning to minimum expectations.

Nevertheless, the current research extrapolates some of the findings from previous research on similar constructs and applies them to further understand the nature of exceeding expectations in trust repair paradigm. Exceeding expectations can help collaborating parties achieve performance goals, success, and excellence of the collaborative work, and as a result, it reestablishes the trustor's positive expectations of the violator and benefits from their collaboration. It also negates negative consequences from the violation while enhancing positive feelings and experiences of the trustor. Furthermore, it shows that the violator is competent and willing enough to complete the tasks and achieve success, increasing the violator's trustworthiness (Mayer et al., 1995). Thus, as the nature, purpose, and motivation

of exceeding expectations are consistent with how trust development and trust repair have been defined and studied in the literature, the current study proposes that exceeding expectations as a trust repair strategy will be effective in repairing the broken trust and making amends for the violation.

Demonstration of Concerns

Demonstration of concerns involves showing benevolence towards the trustor, including showing care, kindness, gratitude, and consideration (Nyein et al., revise & resubmit). In trust repair, through demonstration of concerns, the violator attempts to show benevolence and improve his or her trustworthiness after the violation (Mayer et al., 1995). Previous research has shown that in retailer-supplier relationships, showing benevolence influenced the retailer and suppliers' expectations of positive outcomes for both parties and enhanced their willingness to continue working together in the long run (Cho, Chung, & Hwang, 2015). Furthermore, benevolence also increased satisfaction with the outcomes in the buyer-seller relationships (Xu, Cenfetelli, & Aquino, 2016). Thus, applying these research findings to the trust repair paradigm, by showing benevolence, the violator shows that he or she has positive intentions and the best interests in mind towards the trustor. The trustor is likely to recognize less likelihood of getting hurt in the future. The trustor is also likely to feel satisfied with the relationship and willing to continue collaborating with the violator.

Other forms in demonstration of concerns include showing kindness and gratitude. In a study among students where they were asked to show gratitude and acted kindly towards others, they reported more positive emotions in their daily life and felt engaged academically, although these positive emotions did not last in the long term (Ouweneel, Le Blanc, & Schaufeli, 2014). In another similar study where participants were asked to write five things they were grateful for before playing a trust game, they reported more positive emotions which then led to more trust towards their partner in the game (Drazkowski, Kaczmarek, & Kashdan, 2017). Although these studies examined how expressing gratitude improved the well-being of the person who expressed it, it is human nature that when others are nice, kind, and benevolent to them, individuals receiving it are also likely to feel good and have positive reactions towards others. Then, trust and the relationship are also likely to improve.

Additionally, the current research also reviews prosocial behaviors to extrapolate relevant information to further understand demonstration of concerns. Prosocial behaviors are behaviors that protect or enhance the well-being of individuals, teams, and organizations, and prosocial motivation is the desire to enhance others' well-being through one's work (Bolino & Grant, 2016). Some of the prosocial behaviors are OCBs, but there are also other prosocial behaviors (e.g., mentoring and knowledge sharing) that are not traditionally considered as OCBs in the literature (Bolino & Grant, 2016). Previous research has shown that individuals

who perceived that their actions promoted the well-being of others reported more satisfaction and less burnout (Grant & Campbell, 2007). Moreover, in the teams whose members showed prosocial motivation to benefit the teams, members were more willing to continue working with each other (Hu & Liden, 2015). Applying these findings to the trust repair paradigm, the trustor is likely to feel good to be around and work with someone who is willing to enhance others' well-being including the trustor's. The prosocial behaviors are also likely to actually improve the trustor's well-being as well as increase the trustor's willingness to continue working with the violator.

Similar to theoretically distinguishing exceeding expectations as a distinct construct, it is important to note some of the similarities and differences between prosocial behaviors and demonstration of concerns as a trust repair strategy. Prosocial behaviors and demonstration of concerns are similar in that they both enhance social and affective experiences of others. But, they are different in that prosocial behaviors can be towards an individual, team, or organization as a whole (Bolino & Grant, 2016), whereas demonstration of concerns in trust repair is directed specifically towards the trustor at the individual level. Moreover, factors influencing prosocial behaviors and demonstration of concerns are different such that individuals who have concerns for others and are others-oriented (compared to self-oriented) are more likely to engage in prosocial behaviors (Bolino & Grant, 2016). On the other hand, individuals engage in demonstration of concerns in

response to trust violation in order to repair the broken trust and improve the relationship. They attempt to offset the negative emotions from the violation and enhance the trustor's positive feelings and well-being. Therefore, demonstration of concerns is distinct from prosocial behaviors in terms of levels of analysis and purpose.

Compared with exceeding expectations, demonstration of concerns as a trust repair strategy is more non-task oriented and appeals to social and emotional experiences of the trustor. It attempts to reduce negative feelings from the violation and make the trustor feel good about him- or herself, the violator, and the relationship. It also shows positive intentions of the violator towards the trustor, hence reducing perceptions of the likelihood of the violator committing trust violation again in the future. When the trustor perceives that the violator does not have negative intentions in the violation and towards him or her, the trustor is more likely to forgive the violator (Lewicki & Brinsfield, 2017). Taken together, as the nature and purpose of demonstration of concerns are consistent with trust development and trust repair processes studied in the literature, the current research proposes that demonstration of concerns as a trust repair strategy will be effective in repairing the broken trust and improving the relationship between the trustor and violator.

CHAPTER FOUR

STUDY 1

The purpose of Study 1 is to find additional support for the effectiveness of exceeding expectations and demonstration of concerns as trust repair strategies by collecting data from a different sample from the previous study. It is a correlational study by administering a survey to a culturally diverse employee sample of U.S. citizens and expatriates living in the U.S.. Specifically, it compares the perceived effectiveness of exceeding expectations and demonstration of concerns with that of other commonly studied trust repair strategies in the literature (apology, account, and compensation). In addition, it examines the role of affect as a mechanism in the two repair strategies improving trust. It also examines two moderators, workplace friendship and values individuals have in their life, in the impacts of the two repair strategies on trust.

Comparison with Other Repair Strategies

As previously discussed, by exceeding expectations, the trustor and violator are more likely to achieve excellence in their work (Towns et al., 2001), which can not only negate negative consequences from the violation but also achieve positive outcomes. It also shows that the violator cares about their work, wants to do things right (i.e., integrity), and is competent to complete tasks and achieve the goals, reestablishing positive expectations. Similarly, through demonstration of concerns, the violator cares about the trustor and wants to do well by the trustor, hence

showing benevolence and integrity (Ritzenhöfer, Brosi, Spörrle, & Welpe 2017). Demonstration of concerns, such as expressing gratitude, can also improve positive emotions of the trustor which then lead to more trust (Drazkowski et al., 2017). When the violator shows these characteristics of being trustworthy (competence, benevolence, and integrity), trust is likely to improve (Mayer et al., 1995). Moreover, as trust is two-dimensional with cognitive and affective components (Webber, 2008), task-oriented exceeding expectations and affect-oriented demonstration of concerns improve both components of trust. Therefore, these trust repair strategies will be perceived as effective in trust repair.

Compared with denial, reticence, and account, apology receives the most attention in the literature. However, apology is not always effective in repairing trust (Schweitzer et al., 2006), or at least is more effective when used in combination with other repair strategies (Nyein et al., revise & resubmit). For instance, when the violator used an apology that expressed guilt and self-criticism but did not involve an explanation or request for forgiveness and trust restoration, apology was found to be ineffective in repairing trust (Schweitzer et al., 2006). When apology was accompanied by an explanation and remedy (e.g., compensation), it was more effective than when it was used alone (Schweitzer et al., 2006). In other words, other trust repair strategies play a bigger role and are weighed more by the trustor in trust repair. In addition, based on their theoretical and operationalized definitions (Table 1), a common characteristic of apology,

denial, reticence, and account share is that they involve some type of verbal response to the violation (Lewicki & Brinsfield, 2017). Although verbal responses are helpful to understand the violation and the violator's attitudes and emotions (e.g., positive intention, guilt), it is the actions that matter more in trust (Bottom et al., 2002; Schweitzer et al., 2006). Actions show a full range of functions of trust repair, such as the violator's acknowledging the wrongdoing, taking responsibility, positive intentions, improving the collaboration as well as relationship, achieving positive outcomes, and less likelihood of future violations.

Most importantly, in collaborative relationships, trust repair strategies that will be perceived to be most effective should target improving the collaborative and interdependent nature of the work and relationship. Exceeding expectations directly impacts the collaborative work and helps the collaborating parties to achieve success and superordinate goals in the collaboration. Although demonstration of concerns does not directly impact the collaborative work, it improves the social and affective experiences of the trustor which is likely to make the interaction between the trustor and violator more positive. Through increased positive interactions, they are more likely to exchange information, perform well, and achieve their goals. Therefore, exceeding expectations and demonstration of concerns are expected to improve the collaborative work and relationship between the trustor and violator, hence being perceived as more effective than other trust repair studied commonly in the literature, such as apology, account, and compensation.

Hypothesis 1: Exceeding expectations will be perceived as more effective in trust repair than apology, account, and compensation.

Hypothesis 2: Demonstration of concerns will be perceived as more effective in trust repair than apology, account, and compensation.

Compared with demonstration of concerns, exceeding expectations is more task-oriented and directly contributes to the collaborative work. Collaborative relationships in nature are also task-focused as the primary goal is to accomplish tasks and achieve superordinate goals. Based on the transformational approach of trust development, trust first develops as calculus-based trust based on the cost and benefit analysis of the relationship (Lewicki & Bunker, 1996). As the trustor and trustee interact more and can predict each other's behaviors, knowledge-based trust develops (Lewicki & Bunker, 1996). Eventually, when they identify with each other and make decisions in the mutual interests of each other, identification-based trust develops (Lewicki & Bunker, 1996). Trust in collaborative relationships are most likely to be knowledge-based trust and do not always develop to the point of affective or identification-based trust. Therefore, directly showing task-related behaviors is going to be more beneficial to the collaborative work as well as relationship. While demonstration of concerns is still likely to be helpful, exceeding expectations will be perceived as more effective than demonstration of concerns and most effective among all trust repair strategies.

Hypothesis 3: Exceeding expectations will be perceived as the most effective trust repair strategy.

Affect as Mediator

Surprisingly, the role of affect in trust development, violation, and repair has not received much empirical attention in the literature (Lewicki & Brinsfield, 2017) although a recent study has shown that individuals experience a wide range of and distinct affective and cognitive reactions in all trust-related experiences (Wildman, Pagan, Fry, & Nyein, 2018). For example, individuals experience positive emotions such as happiness after trust is developed, negative emotions such as anger and disappointment after trust is violated, and positive emotions such as relief after trust is repaired (Wildman et al., 2018). Due to very little research specific to affect in trust repair, the current study extrapolates information from research on related constructs and types of relationship and apply them to trust repair paradigm.

Related to exceeding expectations, penance in the form of compensation has been found to enhance positive affective reactions and favorable reactions towards the violator. For example, financial compensation—whether fixed, small, or large amounts—was found to increase cooperation and positive emotions, such as feeling good, pleased, and satisfied (Bottom et al., 2002). In addition, in the vignette-based study of Okimoto and Tyler (2007), the violator was the housing administration at a

university who made a mistake, and the trustor was three individual students. Financial compensation from the university was found to improve favorable reactions, such as affective evaluation of the university housing, overall satisfaction, and willingness to continue using the university housing (Okimoto & Tyler, 2007). In other words, compensation can improve affective reactions, and it is possible for the trustor to collaborate with the violator again.

Furthermore, in supplier-retailer relationships, retailers' satisfaction with the suppliers and with economic outcomes from working with the suppliers increased the perception of the suppliers' credibility (i.e., being reliable and knowledgeable) and benevolence (Cho et al., 2013). The credibility and benevolence then increased the willingness to work together again with the suppliers and maintain a long-term relationship with the suppliers (Cho et al., 2013). In other words, the trustor who feels positive emotions, such as satisfaction and happiness, is likely to continue the relationship and collaborate with the trustee.

Based on emotions as social information theory, individuals use their own emotions as well as others' emotions as a source of information to form attitudes and make judgments about an environment and how to act in that environment (van Kleef & Fischer, 2016; van Kleef, van den Berg, & Heerdink, 2015). When the trustor feels increased positive emotions and reduced negative emotions due to the violator's exceeding expectations, the trustor uses such emotions as a relevant source of information to make judgments about the violator's trustworthiness

(Williams, 2001). When increased positive affect and reduced negative affect are associated with the violator, it increases the violator's trustworthiness and the trustor's motivation to trust. Then, it eventually increases trust and cooperation between the trustor and violator (Williams, 2001). Thus, the current study proposes that penance in the form of exceeding expectations would increase positive emotions and reduce negative emotions, and these affective reactions would lead to desirable outcomes, such as trust, cooperation, and willingness to work together again.

Hypothesis 4: Exceeding expectations will increase the level of trust after a trust violation via (a) increased positive emotions and (b) reduced negative emotions.

Different characteristics of demonstration of concerns involve the violator showing care, benevolence, gratitude, and consideration towards the trustor and also have been found to improve positive emotions and the relationship. For instance, in a vignette-based study, different cues of trustworthiness (e.g., external contract and regulation, benevolence) improved trust via positive emotions such as gratitude and admiration (Robbins, 2016). In another study where participants were asked to write five things they were grateful for before playing a trust game, they reported more positive emotions, which then led to more trust towards their partner

in the game (Drazkowski et al., 2017). These studies show that characteristics of demonstration of concerns, such as benevolence and gratitude, can increase trust via positive emotions.

In another similar study, when participants were asked to express gratitude, they reported positive emotions, such as happiness and satisfaction with life, a high number of relationships they had in their life, and high trust towards others (Gruszecka, 2015). Moreover, in buyer-seller relationships, perceived seller's competence was found to predict the buyer's purchase behaviors, whereas perceived seller's benevolence was found to predict the buyer's satisfaction of the outcome in the negotiation with the seller (Xu et al., 2016). These studies again show that characteristics of demonstration of concerns, such as benevolence and gratitude, can improve not only affective reactions but also the relationship between individuals such as relationship quality and satisfaction.

Although these studies examined the relationships between expressing gratitude and benevolence and affective reactions, it is speculated that receiving gratitude and benevolence is similarly likely to evoke positive reactions, as it is humans' nature to feel good when others are nice, caring, and considerate towards them. As previously discussed, the trustor would use his or her emotions as a relevant source of information to make judgements about whether he or she wants to trust again and about the violator's trustworthiness (Williams, 2001). When increased positive affect and reduced negative affect are associated with the

violator, it increases trustworthiness and the motivation to trust (Williams, 2001). Therefore, the trustor is likely to trust and cooperate with the violator again (Williams, 2001). Taken together, the trustor who receives demonstration of concerns from the violator is likely to feel more positive emotions and less negative emotions, and these affective reactions would improve trust and the relationship.

Hypothesis 5: Demonstration of concerns will increase the level of trust via (a) increased positive emotions and (b) reduced negative emotions.

Workplace Friendship as Moderator

One interesting characteristic of the relationship that participants from the previous study had with the violator was that many of them shared personal friendship with the violator in additional to a professional relationship (Nyein et al., revise & resubmit). This reflects the nature of relationships in today's organizations in that social media and organization events (e.g., retreats) in an attempt to create bonds among employees and to the organizations make the boundary between personal and professional lives blurry. In fact, workplace friendship can increase the perception of job significance especially for employees at the lower organizational level who might not always see the significance of their contribution to the organization (Mao, Hsieh, & Chen, 2012). Therefore, workplace friendship

can be a source of intrinsic motivation and can improve job performance (Hackman & Oldham, 1975).

Likewise, it can also be a source of support for employees to achieve desirable outcomes and reduce negative outcomes. For instance, in the study of Chang, Chou, Liou, and Tu (2016), employees who were perfectionists strived for flawless and excellent performance and had extremely high standards. Team members with healthy perfectionism achieved innovation as they were initiative, persistent, and creative in devising solutions and pursuing their goals. On the other hand, those with unhealthy perfectionism suffered from job burnout as they focused more on unimportant minutiae of the tasks and highly positive evaluations, resulting in emotional exhaustion and reduced feeling of personal accomplishment. Moreover, when the members shared friendship with other team members, the relationship between healthy perfectionism and innovation was strengthened, as well as the relationship between unhealthy perfectionism and job burnout was weakened.

However, workplace friendship can be a double-edged sword such that it can enhance job performance because it indicates cooperation and a source of positive affect and attitudes (Methot, Lepine, Podsakoff, & Christian, 2016). On the other hand, the separate social roles of being friends and being coworkers can conflict and also require some level of effort and commitment in maintaining the relationship. Thus, workplace friendship can increase emotional exhaustion, which

can then derail job performance (Methot et al., 2016). Similarly, relationship conflict (i.e., clashing personality traits or negative emotional interactions) among team members can impact team performance more negatively when the members are also friends (Hood, Cruz, & Bachrach, 2017). In addition, task conflict (i.e., disagreement about tasks team members have to perform) can be beneficial for team performance when they are not friends. Taken together, although these studies did not examine the role of workplace friendship specifically in trust repair experience, they acknowledge the existence of friendship in professional relationships and the impacts it can have on employee experience at the workplace.

Applying this to trust repair paradigm, having friendship in collaborative relationships adds an additional layer of complexity in the dynamics. In other words, the trustor might have additional expectations as friends not only to care about the collaborative work, but also to care about the trustor and be more benevolent. If they have a strictly professional relationship, both exceeding expectations and demonstration of concerns will still be perceived as effective in repairing trust, in other words, not significantly different in their perceived effectiveness. However, when they are also friends, there will be an additional expectation as friends to look out for each other and be more benevolent. The violator needs to address the socio-emotional and relational aspects in the collaboration even more due to having friendship with the trustor.

In addition, trust sequentially develops from calculus-based trust to knowledge-based trust and eventually identification-based trust as the trustor and trustee interact more and deepen the relationship (Lewicki & Bunker, 1996). Work relationships are likely to have knowledge-based trust as individuals know each other well enough to be able to predict each other's behaviors but do not identify with each other (Lewicki & Bunker, 1996). However, if the trustor and violator are friends in addition to being coworkers, their trust is a stronger form of trust, in other words, identification-based trust. Therefore, when trust is broken between them, repairing it may require a trust repair strategy that acknowledges the stronger affective or identity-based connections that exist. Demonstration of concerns addresses such connections as by definition, it involves the violator showing benevolence, care, and consideration towards the trustor. Therefore, demonstration of concerns will be perceived as more effective in improving trust than exceeding expectations when the trustor and violator are also friends in their collaboration. As previously discussed, affective reactions will be the mechanisms through which trust repair strategies would impact different outcomes, including trust.

> *Hypothesis 6:* Compared with exceeding expectations, the effect of demonstration of concerns on the level of trust will be stronger for individuals who are friends with the violator via (a) increased positive emotions and (b) reduced negative emotions than for those whose relationship with the violator is strictly professional.

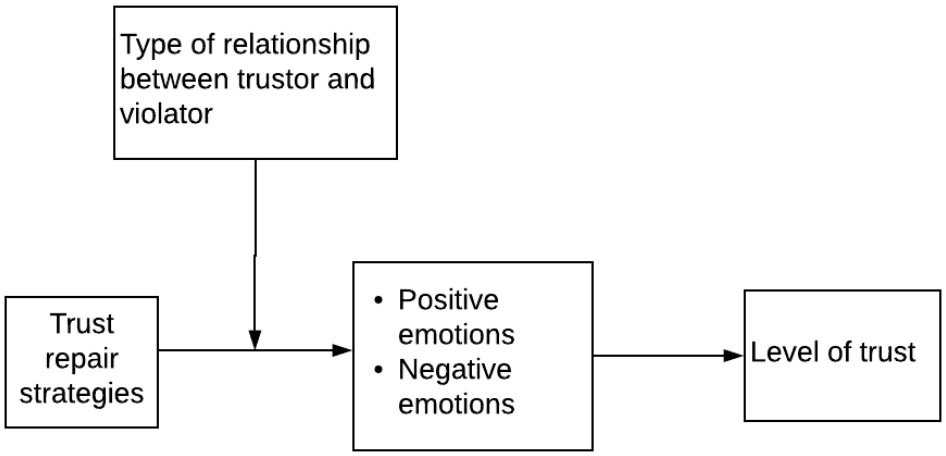

Figure 1. Hypothesis 6: Conditional indirect effect model.

Values as Moderator

Trust involves expectations of positive outcomes from the relationship with another individual (Bhattacharya, Devinney, & Pillutla, 1998). Individuals develop expectations based on what they value or care about in life. Values that individuals have in life are beliefs about what is desirable or not desirable to them, and these values guide their attitudes and behaviors (Edwards & Cable, 2009). Therefore, trust is developed when these expectations and values are fulfilled, and broken when they are not. For example, employees whose values matched with those of their organizations trusted the organization and its employees, and the trust led to positive outcomes such as job satisfaction, identification with the organization, and maintaining positive relationship with the organization (Edwards & Cable, 2009).

Similarly, the trust repair process is also influenced by whether or not the trust repair matches up with what the trustee cares about or values. It also shows that the violator understands the trustor's values and tries to fulfill them, indicating that the violator has positive intentions towards the trustor. As a result, trust is likely to increase, and the trustor might also be willing to cooperate again with the violator.

Applying this to exceeding expectations in repairing trust, exceeding expectations matches with success value which is concerned with achievement of goals and materials in life and efficiency in everything one does (Gouveia, Milfont, & Guerra, 2014). If the trustor values success, what he or she cares about in terms of repairing a relationship is whether or not the violator acts in a way that contributes to the success of their collaborative work. Success in the collaborative task is directly related to effort on that task, and exceeding expectations in completing the tasks will naturally result in excellence in the work (Towns et al., 2001). In other words, if someone is putting in extra effort, it simultaneously is contributing directly to collective success and also signals that the violator cares about success and has similar values. It will also improve positive emotions due to trust repair and success in the collaborative work and reduce negative emotions from the violation. Therefore, when the trustor holds success value, exceeding expectations will be perceived as more effective in improving trust than demonstration of concerns via affective reactions.

Hypothesis 7: When the trustor holds success value, exceeding expectations will be perceived as more effective in improving trust than demonstration of concerns via (a) increased positive emotions and (b) reduced negative emotions.

Similarly, demonstration of concerns matches with affectivity value which is concerned with having a deep and enduring affectionate relationship and having someone to share success and failure with (Gouveia et al., 2014). If the trustor values affectivity, what he or she cares about in terms of repairing a relationship is whether or not the violator cares about him or her and their relationship. Demonstration of concerns as a trust repair strategy is relationship-oriented and affective in nature, and through demonstration of concerns, the violator tries to make the trustor feel good and positive by being nice, caring, and considerate towards the trustor. It also shows that the violator has the trustor's best interest in mind. Therefore, when the trustor holds affectivity value, demonstration of concerns will be perceived as effective in repairing trust as it reduces negative emotions from trust violation and increases positive emotions after trust repair.

Hypothesis 8: When the trustor holds affectivity value, demonstration of concerns will be perceived as more effective in improving trust than exceeding expectations via (a) increased positive emotions and (b) reduced negative emotions.

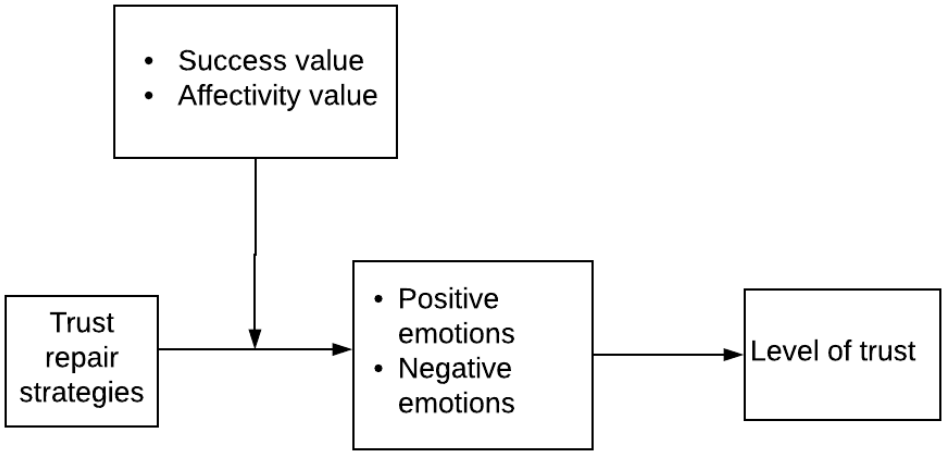

Figure 2. Hypotheses 7 and 8: Conditional indirect effect model.

Table 2. *A Summary of Hypotheses in Study 1*

Hypotheses	Descriptions
H1	Exceeding expectations will be perceived as more effective in trust repair than apology, account, and compensation.
H2	Demonstration of concerns will be perceived as more effective in trust repair than apology, account, and compensation.
H3	Exceeding expectations will be perceived as the most effective trust repair strategy.
H4	Exceeding expectations will increase the level of trust via (a) increased positive emotions and (b) reduced negative emotions.
H5	Demonstration of concerns will increase the level of trust via (a) increased positive emotions and (b) reduced negative emotions.
H6	Compared with exceeding expectations, the effect of demonstration of concerns on the level of trust will be stronger for individuals who are friends with the violator via (a) increased positive emotions and (b) reduced negative emotions than for those whose relationship with the violator is strictly professional.
H7	When the trustor holds success value, exceeding expectations will be perceived as more effective in improving trust than demonstration of concerns via (a) increased positive emotions and (b) reduced negative emotions.
H8	When the trustor holds affectivity value, demonstration of concerns will be perceived as more effective in improving trust than exceeding expectations via (a) increased positive emotions and (b) reduced negative emotions.

Method

Participants

Study 1 used archival data where the original sample included 1068 employees, and they must be at least 18 years old to be eligible to participate. The survey was designed such that participants were asked to report (1) their trust-related experiences in general, (2) critical incidents of trust-related experiences, and (3) individual differences and demographic information. There was an attention check item in each of the above three sections to test whether participants were paying attention while completing the survey. An example attention check item is "For this time, please select Strongly Agree." There was also a question at the end of the survey asking whether the participants understood the survey well enough to complete it (Yes or No). To maximize the sample size in testing hypotheses, different sample sizes will be used.

Data from the first section will be used for the current research to test the perceived effectiveness of trust repair strategies (Hypotheses 1 to 3). In preparing the data for analysis, participants must understand the survey well enough to complete it and pass the attention check item in the first section to be included in the analysis. Three duplicate cases were also deleted. As a result, there were a total of 434 participants (228 men, 199 women, and 4 reporting as non-binary/third gender). Their average age was 41 years old (SD = 12.11) ranging from 19 to 77 years of age. Approximately half of the sample (N = 191) reported being born in

the U.S., and the rest was born outside of the U.S., but all participants lived in the U.S. at the time of participation. Some non-U.S. countries included Mexico (*N* = 38), India (*N* = 13), China (*N* = 12), Philippines (*N* = 12), and United Kingdom (*N* = 11). The following religions were reported: 62.2% Christianity, 21.2% no religion, 3.5% Hinduism, 3.2% Buddhism, 3% Islam, and 2.3% Judaism. The majority of participants (*N* = 423) reported as being employed full-time, nine participants as being employed part-time, and five participants as being self-employed. Average tenure was 7 years and 7 months (*SD* = 7.52) ranging from 1 month to 51 years.

Data from the third section were used to test the mediating role of affect (Hypotheses 4 and 5). Data from the second and third sections were used to test the mediating moderation relationships (Hypotheses 6 to 8). In preparing the data for analysis, participants must understand the survey well enough to complete it and pass the attention check item to be included in the analysis. Only were those who reported successful, relevant, and coherent trust repair critical incidents included in the analysis. Those who did not report trust repair critical incidents, reported irrelevant experiences (e.g., the trustee did not make the sandwich), or did not report coherent experiences (e.g., using one-word answers such as “terrible” or “fail”) were excluded from the analysis. As a result, there were a total of 157 participants (88 men, 66 women, and 1 reporting as non-binary/third gender). Their average age was 42 years old (*SD* = 12.11) ranging from 21 to 77 years of age.

Approximately half of the sample (*N* = 71) reported being born in the U.S., and the rest was born outside of the U.S., but all participants lived in the U.S. at the time of participation. Some non-U.S. countries included Mexico (*N* = 13), United Kingdom (*N* = 7), Germany (*N* = 4), and Philippines (*N* = 4). The following religions were reported: 63.1% Christianity, 19.1% no religion, 3.2% Buddhism, 3.2% Islam, and 3.2% Judaism. The majority of participants (*N* = 150) reported as being employed full-time, eight participants as being employed part-time, and two participants as being self-employed. Average tenure was 8 years and 5 months (*SD* = 7.48) ranging from 3 months to 40 years.

Procedures and Measures

Archival data were collected through Qualtrics' Online Sample service which provides data collection service by recruiting and administering the survey to an employee sample composed of U.S. citizens and expatriates living in the U. S.. The survey took about 20 to 30 minutes on average to complete. For completed responses, Qualtrics was provided with $4 per U.S. employee participant and $18.50 per expatriate employee participants. Participants were compensated with a certain amount of money as determined by Qualtrics.

After giving their consent, participants were first asked about their general experiences of trust development, violation, and repair. Specifically for the current study, they were asked a dichotomous question whether other people as the violator have used listed trust repair strategies to successfully regain their trust (1 = *Yes*, 2 =

No) and how effective the strategies were in repairing trust on a 5-point Likert scale (1 = *Very ineffective*, 5 = *Very effective*; Appendix A). The listed trust repair strategies included providing apology, providing account, providing compensation, exceeding expectations, demonstration of concerns, spending more time together to strengthen interpersonal bonds, and involving a third party. They were also asked to rank the trust repair strategies from most effective to least effective (Appendix B).

After reporting their general trust-related experiences, they were asked to recall critical incidents of trust development, violation, and repair (Appendix C). Regarding their trust repair experience, they reported which trust repair strategies the violator used to repair their trust (Appendix D), affective and cognitive reactions they felt after trust was violated, as well as affective and cognitive reactions they felt after trust was repaired. These trust violation and repair reactions were from a previous study for which archival data were collected to validate (Wildman et al., 2018). Trust violation reactions included being upset, angry, frustrated, disappointed, sad, fearful, guilty, ashamed, regretful, betrayed, confused, helpless, stressed, apathetic, worried, critical of the violator, and a sense of injustice. Trust repair reactions included being relieved, grateful, proud, and pleasantly surprised. Participants were asked to report before and after trust was regained on a 5-point Likert scale (1 = *Not at all*, 5 = *A great deal*; Appendix E). Then, they reported level of trust they had on the violator after the repair on a 5-

point Likert scale (1 = *Not at all*, 5 = *A great deal*). The question was "How much do you trust this person after the trust was repaired?"

They were also asked to take measures of individual differences. For the current study, to measure basic values they hold in their life, participants were presented with a list of 18 basic values from Gouveia et al. (2014). These values included sexuality, success, social support, knowledge, emotion, power, affectivity, religiosity, health, pleasure, prestige, obedience, personal stability, belonging, beauty, tradition, survival, and maturity. They were asked to rate how important they considered each value as a guiding principle in their life on a 7-point Likert scale (1 = *Completely unimportant*, 7 = *Of the utmost importance*; Appendix F). At the end, they were asked to report their demographics, such as age, gender, and ethnicity before being debriefed.

Results

Perceived Effectiveness of Trust Repair Strategies

Participants were first asked to report their experiences of trust development, violation, and repair in collaborative relationships in general where they were asked to rate and rank all the trust repair strategies the violator had used in repairing trust and their effectiveness. A one-way repeated measures ANOVA was used to test the perceived effectiveness of exceeding expectations and demonstration of concerns compared with that of other trust repair strategies, such as apology, account, and compensation. Mauchly's test indicated that the

assumption of sphericity was violated for the main effect of trust repair strategies, $\chi^2(9) = .67$, $p < .01$. Therefore, results from a relatively conservative test, Greenhouse and Geisser, were reported. Results showed that there was a significant main effect for the overall perceived effectiveness of trust repair strategies , $F(3.25, 962.67) = 89.92$, $p < .01$, partial $\eta^2 = .23$. Post-hoc tests using Bonferroni showed that the perceived effectiveness of exceeding expectations ($M = 3.67$, $SD = 1.24$) was significantly higher than that of compensation ($M = 2.51$, $SD = 1.35$, $p < .01$), but it was not significantly different from apology, account, and demonstration of concerns. The perceived effectiveness of demonstration of concerns ($M = 3.56$, $SD = 1.22$) was significantly higher than that of compensation ($M = 2.51$, $SD = 1.35$, $p < .01$), but was significantly lower than that of apology ($M = 3.84$, $SD = 1.24$, $p < .01$). Demonstration of concerns was not perceived to be more effective than account.

Additionally, the perceived effectiveness of apology was significantly higher than that of account ($M = 3.59$, $SD = 1.20$, $p < .01$) and compensation ($p < .01$). The perceived effectiveness of account was also significantly higher than that of compensation ($p < .01$). Taken together, apology was perceived to be more effective than account, compensation, and demonstration of concerns but not exceeding expectations. Both exceeding expectations and demonstration of concerns were perceived to be more effective than compensation only. Compensation was perceived to be the least effective.

Table 3. *Means and Standard Deviations of Perceived Effectiveness of Trust Repair Strategies Using Likert Scale*

	M	*SD*
Apology	3.84	1.24
Exceeding expectations	3.67	1.24
Account	3.59	1.20
Demonstration of concerns	3.56	1.22
Compensation	2.51	1.35

Participants were also asked to rank the perceived effectiveness of trust repair strategies from most effective to least effective. Based on frequency counts, the highest frequency in ranking apology from most effective to least effective was 201 out of 416 responses for ranking it first (i.e., most effective). The highest frequency in ranking account was 141 out of 416 responses for ranking it second. The highest frequency in ranking compensation was 237 out of 416 responses for ranking it last (i.e., least effective). The highest frequency in ranking exceeding expectations was 108 out of 416 responses for ranking it third. The highest frequency in ranking demonstration of concerns was 101 out of 416 responses for ranking it fourth.

Table 4. *Frequencies in Ranking Perceived Effectiveness of Trust Repair Strategies*

	Apology	Account	Exceeding Expectations	Demonstration of concerns	Spending Time Together	Involving a Third Party	Compensation
Rank 1	**201**	84	56	18	25	17	15
Rank 2	107	**141**	65	55	19	18	11
Rank 3	40	72	**108**	89	48	39	20
Rank 4	18	45	90	**101**	72	66	24
Rank 5	22	35	55	87	109	74	34
Rank 6	19	27	21	50	**113**	**111**	75
Rank 7	9	12	21	16	30	91	**237**

Note. Spending time together and involving a third party were two other repair strategies that were not examined in the current study. Rank 1 = most effective, Rank 7 = least effective; Total $N = 416$.

Taken together, in rating and ranking the perceived effectiveness of trust repair strategies, apology was perceived to be the most effective, and compensation was perceived to be the least effective. The perceived effectiveness of account, exceeding expectations, and demonstration of concerns were moderate. Therefore, Hypothesis 1 that exceeding expectations would be perceived to be more effective than other repair strategies was partially supported. Similarly, Hypothesis 2 that demonstration of concerns would be perceived to be more effective than other repair strategies was partially supported. However, Hypothesis 3 that exceeding expectations would be perceived as the most effective was not supported.

Affect as Mediator in the Relationship between Exceeding Expectations and Trust

Participants were asked to recall specific incidents of trust development, violation, and repair in collaborative relationships. They were given a list of trust repair strategies and asked whether or not the violator used any or all of them to repair their trust. As it was a repeated measure design (i.e., they could choose more than one repair strategy), there were too many possible combinations of trust repair strategies to categorize each combination individually. However, to estimate the sample size of each repair strategy as well as a combination of repair strategies, "Select Cases" function in SPSS was used. For example, if the violator used exceeding expectations and did not use demonstration of concerns while ignoring whether the violator used the rest of the trust repair strategies, exceeding

expectations was coded as 1, and demonstration of concerns was coded as 0. In other words, the violator used at least one trust repair strategy, exceeding expectations, but did not use demonstration of concerns. If the violator used both exceeding expectations and demonstration of concerns while ignoring whether the violator used the rest of trust repair strategies, both were coded as 1. In other words, the violator used at least both exceeding expectations and demonstration of concerns. Then, their frequencies were calculated. Please see Table 5 for frequencies of a combination of trust repair strategies.

To test the mediating role of affect in the effects of exceeding expectations and demonstration of concerns on the level of trust after trust repair, PROCESS macro for SPSS was used (Hayes, 2018). Unstandardized indirect effects were computed for 5,000 bootstrapped samples with a 95% confidence interval. Exceeding expectations (N = 126) was coded as whether or not the violator used it as a trust repair strategy (Yes = 1, No =0). Although the violator might also use other trust repair strategies, for the purpose of the current study, only exceeding expectations was considered. The same approach was used for coding demonstration of concerns (N = 123).

Table 5. *Frequencies of Trust Repair Strategies Used in Critical Incidents*

Apology	Account	Compensation	Exceeding Expectations	Demonstration of concerns	Spending Time Together	Involving a Third Party	N
1							135
			1				126
				1			123
	1						123
			1	1			105
1	1		1	1			82
		1					22
			1	0			19
			0	1			18
			0	0			13

Note. 1 = the violator used the trust repair strategy. 0 = the violator did not use the trust repair strategy. If neither 1 nor 0 was indicated, whether or not the violator used the repair strategies was not considered in the frequency count.

The mediating relationships between trust repair strategies and trust via positive and negative emotions were tested separately in a single mediator model. The indirect effect of exceeding expectations (.27) on the level of trust after trust repair via average positive emotions was significant [.046, .50]. Moreover, the indirect effects of exceeding expectations on the level of trust via individual positive emotions were also tested. The indirect effect of exceeding expectations (.24) on the level of trust through feeling happy was significant [.042, .45]. The indirect effect of exceeding expectations (.21) on the level of trust through feeling grateful was also significant [.012, .44]. The indirect effect of exceeding expectations (.24) on the level of trust through feeling proud of the violator was significant [.018, .48]. The indirect effect of exceeding expectations (.16) on the level of trust through feeling pleasantly surprised by the violator's repair was significant [.031, .34].

A multiple mediator model was also tested by including all individual positive emotions ($N = 8$) simultaneously. None of the mediating relationships were not significant when included as simultaneous mediators, suggesting significant shared variance between the individual emotions. In addition, instead of using positive emotions and the level of trust after trust repair, a supplementary analysis using the change in positive emotions and the change in the level of trust before and after trust repair was conducted. However, it did not change the results. Finally, the same analyses were conducted while controlling for positive emotions and the

level of trust before trust repair, but it did not change the results. Taken together, when using single mediator models, Hypothesis 4a that exceeding expectations would increase the level of trust via increased positive emotions was supported. Specifically, exceeding expectations to repair trust increased the level of trust because it made the trustor feel positive emotions, particularly feeling happy, grateful, proud, and pleasantly surprised.

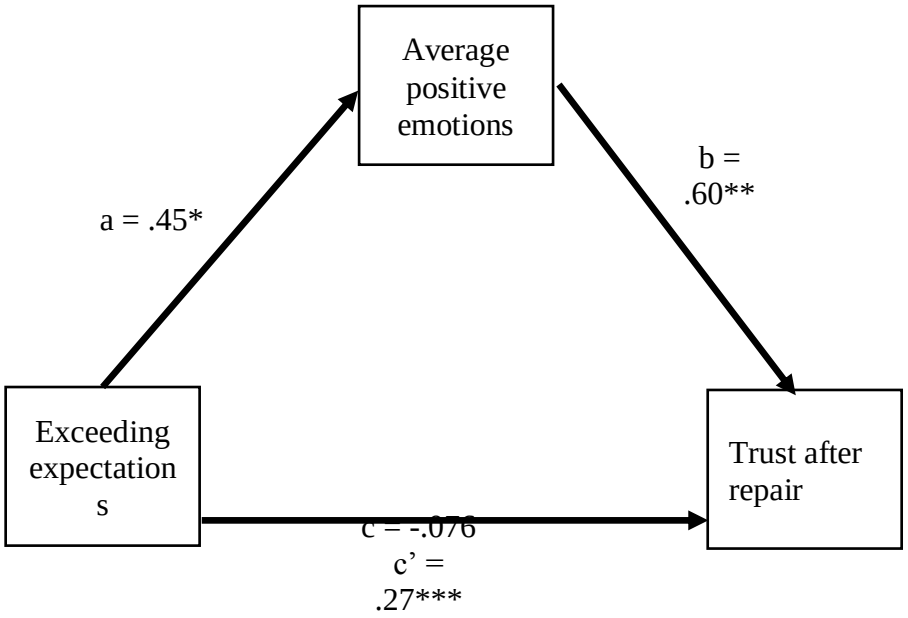

Figure 3. Indirect effect of average positive emotions between exceeding expectations and trust. *$p < .05$, **$p < .001$, ***95% CI [.042, .50]

The indirect effect of exceeding expectations (.0027) on the level of trust through negative emotions was not significant [-.048, .066] in a single mediator model. The indirect effects of exceeding expectations on the level of trust through individual negative emotions (e.g., anger, frustration) were also tested, and they were not significant. Although the indirect effect was not significant, exceeding expectations was found to be negatively related to negative emotions, and negative emotions were also negatively related to the level of trust (Figure 4). Therefore, the direction of the effect was as expected.

A multiple mediator model by including all individual negative emotions simultaneously could not be tested. PROCESS macro only allows 10 mediators in the model at a time, and there were a total of 17 individual negative emotions in the current study. In addition, instead of using their absolute values after trust repair, the change in average negative emotions and the change in the level of trust were used, but the relationships were not significant. Moreover, the same analyses were conducted while controlling for the negative emotions and the level of trust before trust repair, but it did not change the results. Finally, a multiple mediator model was tested by including both average positive emotions and average negative emotions simultaneously. However, it did not change the results such that the mediating relationship of average positive emotions was still significant, but the mediating relationship of average negative emotions was not. Therefore,

Hypothesis 4b that exceeding expectations would increase the level of trust via reduced negative emotions was not supported.

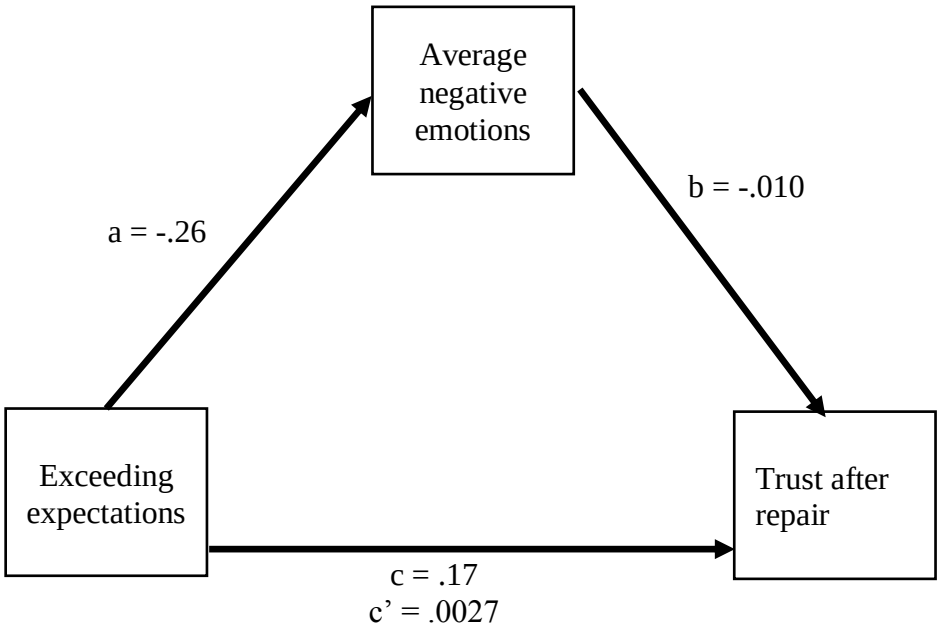

Figure 4. Indirect effect of average negative emotions between exceeding expectations and trust.

Affect as Mediator in the Relationship between Demonstration of Concerns and Trust

In a single mediator model, the indirect effect of demonstration of concerns (.16) on the level of trust through average positive emotions was not significant [-.077, .39]. The indirect effects of demonstration of concerns on the level of trust through individual positive emotions were also tested in both single mediator and multiple mediators models, and they were not significant. Moreover, when the change in positive emotions and the change in the level of trust before and after repair were used, it did not change the results. Furthermore, the same analyses were conducted while controlling for the positive emotions and the level of trust before trust repair, but it did not change the results. Therefore, Hypothesis 5a that demonstration of concerns would increase the level of trust via increased positive emotions was not supported.

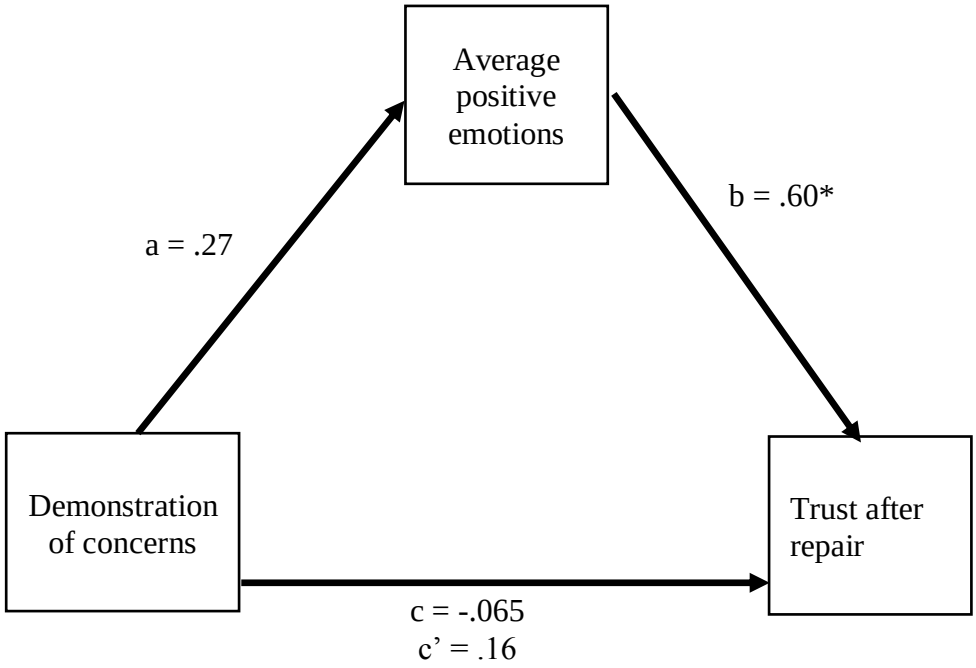

Figure 5. Indirect effect of average positive emotions between demonstration of concerns and trust. *$p < .001$

The indirect effect of demonstration of concerns (-.0046) on the level of trust through negative emotions was not significant [-.064, .036] in a single mediator model. The indirect effects of demonstration of concerns on the level of trust through individual negative emotions were also tested in single mediator models, and they were not significant. A multiple moderator model by including all individual negative emotions simultaneously could not be tested as there was 10 mediator limitation in PROCESS macro. Moreover, using the change in negative

emotions and the change in trust did not change the results. Furthermore, the same analyses were conducted while controlling for the negative emotions and the level of trust before trust repair, but it did not change the results. Finally, when both average positive emotions and average negative emotions as mediators were tested simultaneously either by using their absolute values or change values, the results were also not significant. Therefore, Hypothesis 5b that demonstration of concerns would increase the level of trust via reduced negative emotions was not supported.

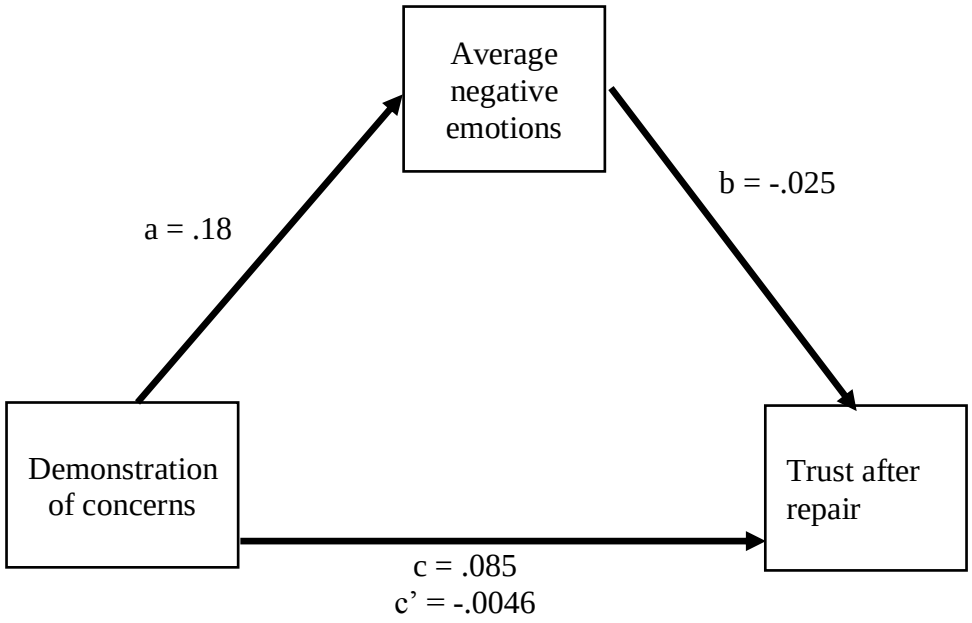

Figure 6. Indirect effect of average negative emotions between demonstration of concerns and trust.

Table 6. *A Summary of Indirect Effects Tested Individually*

Mediation Pathway	Total Effect	Direct Effect	Indirect Effect	Boot SE	Boot LLCI	Boot ULCI
Exceeding expectations -> Positive emotions -> Trust	.27	-.076	.27*	.11	.053	.50
Exceeding expectations -> Negative emotions -> Trust	.0026	.17	.0027	.026	-.048	.066
Exceeding expectations -> Change in positive emotions -> Change in trust	.17	.42	.17	.12	-.070	.42
Exceeding expectations -> Change in negative emotions -> Change in trust	.066	.52*	.068	.091	-.094	.26
Demonstration of concerns -> Positive emotions -> Trust	.16	-.065	.16	.12	-.077	.39
Demonstration of concerns -> Negative emotions -> Trust	-.0045	.085	-.0046	.0022	-.064	.034
Demonstration of concerns -> Change in positive emotions -> Change in trust	-.0049	.27	-.0049	.13	-.28	.23
Demonstration of concerns -> Change in negative emotions -> Change in trust	-.024	.29	-.024	.085	-.19	.14

*$p < .05$, **significant based on 95% confidence interval

Workplace Friendship as Moderator

To test workplace friendship and values as moderators in the mediating relationship between trust repair strategies and the level of trust through affective reactions, PROCESS macro for SPSS with 5,000 bootstrapped samples and a 95% confidence interval. was used (Hayes, 2018). In a single mediator model, the conditional indirect effect of exceeding expectations (-.29) on the level of trust through average positive emotions was not significantly moderated by workplace friendship [-.72, .15]. The conditional indirect effect of exceeding expectations (.0010) on the level of trust through average negative emotions was not significantly moderated by workplace friendship [-.062, .075]. When a multiple mediator model was tested by including both average positive emotions and average negative emotions simultaneously, the results were also not significant. Moreover, the same analyses were conducted using the change in emotions and the change in trust in single and multiple mediator models, but it did not change the results.

In a single mediator model, the conditional indirect effect of demonstration of concerns (-.073) on the level of trust through average positive emotions was not significantly moderated by workplace friendship [-.56, .42]. The conditional indirect effect of demonstration of concerns (.0064) on the level of trust through average negative emotions was not significantly moderated by workplace friendship [-.074, .091]. When a multiple mediator model was tested by including

both average positive emotions and average negative emotions simultaneously, the results were also not significant. Moreover, the same analyses were conducted using the change in emotions and the change in trust in single and multiple mediator models, but it did not change the results. Taken together, when the trustor and violator shared friendship, neither exceeding expectations nor demonstration of concerns improved trust via (a) increased positive emotions and (b) reduced negative emotions. Therefore, Hypothesis 6 was not supported.

Values as Moderator

In a single mediator, the conditional indirect effect of exceeding expectations (.12) on the level of trust through average positive emotions was not significantly moderated by success value [-.092, .38]. The conditional indirect effect of exceeding expectations (-.0001) on the level of trust through average negative emotions was not significantly moderated by success value [-.041, .035]. When a multiple mediator model was tested by including both average positive emotions and average negative emotions simultaneously, the results were also not significant. Moreover, the same analyses were conducted using the change in emotions and the change in trust in single and multiple mediator models, but it did not change the results. Therefore, Hypothesis 7 that when the trustor held success value, exceeding expectations would be perceived as more effective in improving trust via (a) increased positive emotions and (b) reduced negative emotions was not supported.

In a single mediator model, the conditional indirect effect of demonstration of concerns (-.036) on the level of trust through average positive emotions was not significantly moderated by affectivity value [-.28, .18]. The conditional indirect effect of demonstration of concerns (.0034) on the level of trust through average negative emotions was not significantly moderated by affectivity value [-.040, .046]. When a multiple mediator model was tested by including both average positive emotions and average negative emotions simultaneously, the results were also not significant. Moreover, the same analyses were conducted using the change in emotions and the change in trust in single and multiple mediator models, but it did not change the results. Therefore, Hypothesis 8 that when the trustor held affectivity value, demonstration of concerns would be perceived as more effective in improving trust via (a) increased positive emotions and (b) reduced negative emotions was not supported.

Table 7. *A Summary of Results in Study 1*

Hypotheses	Descriptions	Findings
H1	Exceeding expectations will be perceived as more effective in trust repair than apology, account, and compensation.	Partially supported compared with compensation
H2	Demonstration of concerns will be perceived as more effective in trust repair than apology, account, and compensation.	Partially supported compared with compensation
H3	Exceeding expectations will be perceived as the most effective trust repair strategy.	Not supported
H4	Exceeding expectations will increase the level of trust via (a) increased positive emotions and (b) reduced negative emotions.	Partially supported for 4(a)
H5	Demonstration of concerns will increase the level of trust via (a) increased positive emotions and (b) reduced negative emotions.	Not supported
H6	Compared with exceeding expectations, the effect of demonstration of concerns on the level of trust will be stronger for individuals who are friends with the violator via (a) increased positive emotions and (b) reduced negative emotions than for those whose relationship with the violator is strictly professional.	Not supported
H7	When the trustor holds success value, exceeding expectations will be perceived as more effective in improving trust than demonstration of concerns via (a) increased positive emotions and (b) reduced negative emotions.	Not supported
H8	When the trustor holds affectivity value, demonstration of concerns will be perceived as more effective in improving trust than exceeding expectations via (a) increased positive emotions and (b) reduced negative emotions.	Not supported

Discussion

Study 1 examines the perceived effectiveness of exceeding expectations and demonstration of concerns by conducting a correlational survey-based study using a culturally diverse employee sample of U. S. citizens and expatriates living in the U.S.. Results showed that exceeding expectations and demonstration of concerns were perceived as effective, but not more effective than other repair strategies except compensation. Specifically, in both rating and ranking the perceived effectiveness of trust repair strategies, both exceeding expectations and demonstration of concerns were perceived as more effective than compensation, and compensation was perceived to be the least effective among all trust repair strategies. In rating the perceived effectiveness, exceeding expectations was not perceived as significantly more effective than other repair strategies. Similarly, in rating the perceived effectiveness, demonstration of concerns was perceived as significantly less effective than apology but not different from other repair strategies. However, in ranking the perceived effectiveness, apology received the highest frequency in being ranked as the most effective followed by account, exceeding expectations, and demonstration of concerns consecutively.

One possible reason is that apology is the most intuitive concept, in other words, everyone knows what it is and thinks of it first when thinking of trust repair. Therefore, they might say it is the most effective, but when they actually experience trust violation, it might not always be the case. This is supported by the

frequencies of the use of a combination of trust repair strategies in recalling critical incidents of trust. There were 105 out of 157 critical incidents of successful trust repair where at least both exceeding expectations and demonstration of concerns was used together. There were 82 out of 157 critical incidents of successful trust repair where at least apology, account, exceeding expectations, and demonstration of concerns were used together. Therefore, although people might intuitively think and say that apology was the most effective, when they actually recalled examples of successful trust repair, exceeding expectations and demonstration of concerns were almost always included.

Another reason may be that exceeding expectations and demonstration of concerns require subsequent interaction between the trustor and violation. If there is no opportunity to work together again or no interaction following the violation event, the violator cannot put in extra effort for the collaborative work or show the trustor benevolence. In one single collaboration where trust is violated, if the violator wants to repair trust, he or she is most likely to apologize and provide an explanation or reason for the violation first. Then, the violator is likely to put in extra effort, improves him- or herself to be more competent, and be nice and benevolent in subsequent collaboration, which requires time and further interaction between the trustor and violator.

Therefore, future research should consider the long-term collaboration in studying the effects of exceeding expectations and demonstration of concerns. For

example, future research can examine whether the effects of exceeding expectations and demonstration of concerns differ when they are engaged in the same collaboration where violation happened or in a different collaboration. Moreover, the type of violation is also likely to influence the effects of exceeding expectations and demonstration of concerns. In the current study, critical incidents of trust violation and repair were asked in open-ended questions ("What did the person do to break/regain your trust?"). Many participants did not provide enough details to be able to meaningfully code what type of violation they experienced, and the effect of the type of violation could not be analyzed. Thus, future research should consider the type of violation as a moderator or control for it in testing the effects of trust repair strategies.

In addition, it was found that exceeding expectations increased the level of trust because it made the trustor feel positive emotions, particularly feeling happy, grateful, proud, and pleasantly surprised. However, exceeding expectations did not have a significant effect on the level of trust through reduced negative emotions. Demonstration of concerns also did not have a significant effect on the level of trust through either positive or negative emotions. Moreover, the moderating effects of workplace friendship and values on the mediating relationships were also not significant. This shows that trust repair might increase positive emotions but might not negate negative emotions from the violation. This is consistent with what has been discussed in the literature that positive affect and negative affect can exist

together (Barsade & Gibson, 2007). Therefore, despite trust repair effort, the nature of trust and relationship might not be the same as before the violation due to the additional existence of negative emotions from the violation. Instead of studying trust alone as an outcome, future research can examine the effects of exceeding expectations and demonstration of concerns on trust and distrust via positive and negative affect. Trust and distrust has been discussed as distinct constructs but not on the opposite end of a continuum (Lewicki et al., 1998, Wildman, Fiore, & Salas, 2009). In other words, distrusting someone is not the same as the lack of trust. Although exceeding expectations and demonstration of concerns might not increase trust through positive and negative affect, they might possibly reduce distrust.

Because it was a survey-based study using retrospective cross-sectional data, there was no temporal separation of the variables for the mediating relationships. They might be related to each other or have inflated relationships simply because they were measured in the same survey at the same time. Moreover, the measures used for positive and negative emotions were not validated measures. By calculating the average of these emotions, there might be issues related to reliability and validity due to using items that might not be related to each other or measure what they were supposed to measure. Another limitation is that because the relationships were correlational, the internal validity of exceeding expectations and demonstration of concerns could not be established. Therefore, Study 2 addresses these limitations by using experimental manipulations, validated

measures for affective reactions, and temporal separation in measures (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003).

While considering these limitations, overall results from Study 1 provide support for the use and perceived effectiveness of exceeding expectations and demonstration of concerns in collaborative relationships. Although they might not be perceived as the most effective trust repair strategies, they were still perceived as effective in addition to apology and account. Furthermore, a very commonly reported pattern of trust repair included exceeding expectations and demonstration of concerns in conjunction with apology and account. Therefore, even if they were not perceived as more effective, they were at least as prevalent, if not more so. In addition, although compensation might be useful in negotiation or exchange-based relationships, they were perceived as the least effective in collaborative relationships. Taken together, if individuals want to repair trust in collaborative relationships, it is suggested that they use a combination of apology, account, exceeding expectations, and demonstration of concerns.

CHAPTER FIVE

STUDY 2

The purpose of Study 2 is to further establish the internal validity of exceeding expectations and demonstration of concerns as trust repair strategies through an experiment using a collaborative game called Colored Trails. After establishing the prevalence and perceived effectiveness of these two repair strategies in the previous study and Study 1, Study 2 aims to test causal inferences about the effects of exceeding expectations and demonstration of concerns on different outcomes in trust repair. Specifically, Study 2 examines the role of values individuals have in life in the effectiveness of the two repair strategies by using different outcomes from Study 1, such as trust, information sharing, and willingness to work together again. These outcomes were chosen because they are understudied in the literature but are important in collaborative relationships.

In collaborative relationships, individuals need to rely on each other and share information and expertise to perform the tasks. Without such information sharing, it will be difficult to accomplish the tasks and achieve the goals. Additionally, many collaboration relationships in the real world are ongoing, and the trustor and violator are likely to continue interacting with each other, for example, because they are part of the same team or organization. Therefore, it is important to know whether trust repair improves information sharing and the willingness to work together again (e.g., Cho et al., 2013; Toh & Srinivas, 2011).

Study 2 also addresses some of the limitations of Study 1 in testing the mediation of affect in trust repair by using experimental manipulations and temporal separation of measures. It examines affective reactions from trust violation and repair as mechanisms through which the two repair strategies impact the outcomes by using a different and validated measure of affect from Study 1.

Level of Trust as Outcome

The mediation role of affect in the relationship between trust repair strategies and level of trust (Hypotheses 4 and 5) was tested again in Study 2. Likewise, the mediated moderation of trust repair strategies and values on the level of trust via affective reactions (Hypotheses 7 and 8) was also tested again in Study 2.

Information Sharing as Outcome

Previous research has shown that when trust exists in the relationship, the trustor is more open, less guarded, and willing to share information—whether personal or task-related—with the violator (Wildman et al., 2018). Information sharing is not new in the literature, but information sharing particularly after trust repair is understudied. Given little research on the topic, the current study will extrapolate information from broader research on general trust and information sharing and apply them to trust repair paradigm. For instance, in multinational organizations, the perception of task cohesiveness (i.e., shared goals, tasks, and commitment to accomplish them) by host country employees increased the

willingness to share information with their expatriate coworkers because they trusted their coworkers (Toh & Srinivas, 2011). Applying this to trust repair, both exceeding expectations and demonstration of concerns capture the sharedness of the goals and tasks and the interdependent nature of the collaborative relationships. By exceeding expectations, the violator attempts to substantially improve the collaborative work and achieve goals and positive outcomes. Through demonstration of concerns, the violator aims to improve the social and affective experiences of the trustor which then enhance the interaction and communication between the trustor and violator. Therefore, these repair strategies would improve trust and subsequent information sharing.

In another similar study, Chowdhury (2005) studied dyadic trust between team members and complex knowledge sharing which includes sharing knowledge that is abstract, specific to contexts, and cannot be found elsewhere. The dyadic trust increased sharing complex knowledge between two team members, but it did not increase knowledge sharing with other members in the team (Chowdhury, 2005). Moreover, both cognitive trust and affective trust also increased complex knowledge sharing (Chowdhury, 2005). Applying this to trust repair, as exceeding expectations is task-oriented, and demonstration of concerns is affective in nature, they directly reflect and aim to improve both cognitive and affective components of trust. Thus, they are likely to improve trust and information sharing following a trust violation.

Moreover, Cazier and colleagues (2007) studied employees' perception of value congruence with an organization (e.g., organization supporting moral and political causes employees supported). They found that perceived value congruence improved the organization's trustworthiness (ability and benevolence) and trust in the organization which then led to willingness to share personal information, such as name, email, and credit card, with the organization (Cazier et al., 2007). Perception of value congruence also directly influenced information sharing such that employees who perceived value congruence with the organization were more willing to share personal information with the organization (Cazier et al., 2007). Taken together, combined with the previous discussion on the mediating role of affect and moderating role of values between trust repair strategies and different outcomes in Study 1, the current study proposes that exceeding expectations and demonstration of concerns, as they attempt to improve trust and the relationship between the trustor and violator, will also increase information sharing via affective reactions.

> *Hypothesis 9:* When the trustor holds success value, exceeding expectations will be perceived as more effective in improving information sharing than demonstration of concerns via (a) increased positive emotions and (b) reduced negative emotions.

Hypothesis 10: When the trustor holds affectivity value, demonstration of concerns will be perceived as more effective in improving information sharing than exceeding expectations via (a) increased positive emotions and (b) reduced negative emotions.

Willingness to Work Together Again as Outcome

Another understudied outcome of trust is continued interaction and collaboration such that the trustor and violator are likely to keep in touch even after the collaboration ended, increase the frequency of interactions, or work together again in the future (Wildman et al., 2018). Again, given little research on the topic, the current study will extrapolate information from broader research on general trust and maintaining the relationship and apply them to trust repair paradigm. For instance, when hotel and restaurant customers rated the establishment's service quality (e.g., ability to perform services as requested and willingness to help customers), it was found that high service quality increased the customers' positive emotions. These positive emotions then led to the customers' return to the establishment and providing positive recommendation of the establishment to others (Gracia, Bakker, & Grau, 2011). In other words, when they perceived the establishment's trustworthiness based in its ability and benevolence, they were likely to be loyal and continue working with them.

In another similar study, in supplier-retailer relationships, retailers' satisfaction with the suppliers and with economic outcomes from working with the suppliers increased the perception of the suppliers' trustworthiness (i.e., being reliable and knowledgeable and benevolence). The trustworthiness then increased the retailers' willingness to work together again with the suppliers and maintain a long-term relationship with the suppliers (Cho et al., 2013). Applying this to trust repair paradigm, by exceeding expectations, the violator shows that he or she cares about the collaborative work, wants to do things right (i.e., integrity), and is competent to complete tasks and achieve the goals, reestablishing positive expectations. Similarly, through demonstration of concerns, the violator shows that he or she cares about the trustor and wants to do well by the trustor, hence showing benevolence and integrity. Therefore, they would improve the trustor's willingness to continue the relationship and work together with the violator again. Combined with the previous discussion on the mediating role of affect and moderating role of values between trust repair strategies and different outcomes in Study 1, the current study proposes that exceeding expectations and demonstration of concerns, as they attempt to improve trust and the relationship between the trustor and violator, will also increase the willingness to work together again via affective reactions.

Hypothesis 11: When the trustor holds success value, exceeding expectations will be perceived as more effective in improving the willingness to work together again than demonstration of concerns via (a) increased positive emotions and (b) reduced negative emotions.

Hypothesis 12: When the trustor holds affectivity value, demonstration of concerns will be perceived as more effective in improving the willingness to work together again than exceeding expectations via (a) increased positive emotions and (b) reduced negative emotions.

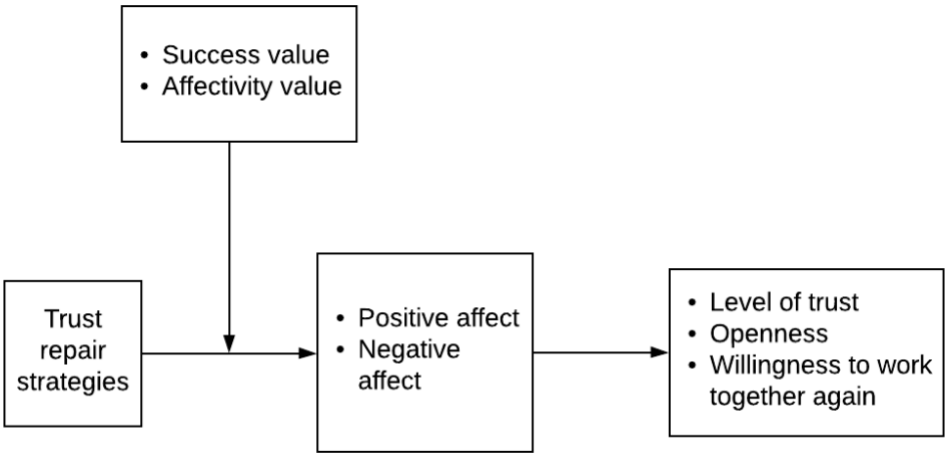

Figure 7. A model summary for Hypotheses 9 to 12.

Table 8. *A Summary of Hypotheses in Study 2*

Hypotheses	**Descriptions**
H9	When the trustor holds success value, exceeding expectations will be perceived as more effective in improving information sharing than demonstration of concerns via (a) increased positive emotions and (b) reduced negative emotions.
H10	When the trustor holds affectivity value, demonstration of concerns will be perceived as more effective in improving information sharing than exceeding expectations via (a) increased positive emotions and (b) reduced negative emotions.
H11	When the trustor holds success value, exceeding expectations will be perceived as more effective in improving willingness to work together again than demonstration of concerns via (a) increased positive emotions and (b) reduced negative emotions.
H12	When the trustor holds affectivity value, demonstration of concerns will be perceived as more effective in improving willingness to work together again than exceeding expectations via (a) increased positive emotions and (b) reduced negative emotions.

Method

Participants

Study 2 used archival data where the sample included 90 participants from a southeastern university, and they must be at least 18 years old to be eligible to participate. There were 61 men, 28 women, and one who identified as non-binary/third gender. Their average age was 20 years old (*SD* = 3.57) ranging from 18 to 40 years of age. Fifty-seven participants reported as White/Caucasian, Anglo, European, 12 participants as Black/African American/African, eight participants as Hispanic or Latino, 12 participants as Asian or Asian American, two participants as American Indian, and four participants as Middle Eastern. Sixty-six participants reported as students, four as being employed full-time, 12 participants as being employed half-time, and one participant as being self-employed. Twenty-five participants identified as international students, and 65 participants reported as non-international students. For their participation, they were compensated with $12 Amazon gift card, entered into a raffle for an additional $20 gift card, and research participation credits if they were enrolled in psychology classes.

Procedures

In collecting archival data, participants first took an online survey measuring their individual differences (e.g., personality traits) before coming to the lab to participate in the experiment. On average, the survey took about 20 to 30 minutes to complete, and the experiment took about an hour. When they arrived at

the lab, participants were told that they would be playing a game with another participant from University of Akron as a team, and that participants and their partner were part of a Martian resource transportation organization that delivered critical resources to mining stations on Mars. The primary goal of the game was for both players to successfully deliver their resources (light regolith and dark regolith) to the stations. They were also told that the study was about how people worked collaboratively on tasks when communications were limited. Therefore, instead of communicating with their partner directly, they would be communicating through the experimenter using Google Hangouts. In reality, they were playing with a computer agent, and the purpose of this deception was to mimic collaboration with another human being and invoke genuine reactions and behaviors when their trust was violated and repaired.

After providing their consent to participate, participants began the experiment by taking a brief team building exercise to get to know their partner better. In this exercise, they indicated the leisure activities they liked to engage in their free time (e.g., playing computer games and hanging out with friends). Then, the experimenter matched the gender and leisure interests of the participants as those of their partner and gave the responses back to the participants. The purpose of this exercise was to reinforce the experimental manipulation that the partner that they were playing with was another actual person. It also meant to help develop some initial level of trust between them as research has shown that shared values

and similarities help develop trusting relationships (Jones & George, 1998). After the team building exercise, participants watched a training video showing them how to play the game. Then, they played seven rounds of game and completed surveys after each round. At the end, they were debriefed thoroughly and thanked for their participation.

Colored Trails

The game board (Figure 8) involves 13 x 13 squared grid where the starting point is at the bottom of the board and the end point at the top. Players can draw paths from the starting point to the end point to deliver resources by moving up, down, left, and right but not diagonally. The blue line represents the participants' path, and the red line represents the computer agent's path.

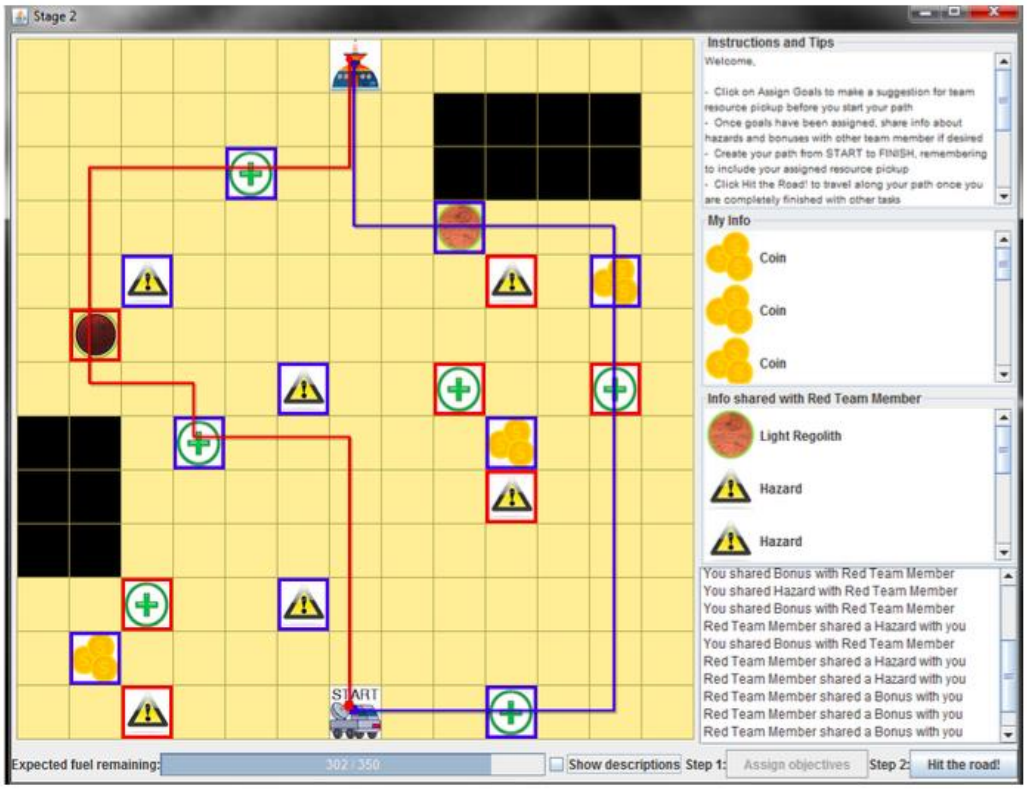

Figure 8. The game board of Colored Trails.

Team Goal. The team goal was for both players to save fuel and successfully deliver the resources. Each player had a fixed amount of fuel for all seven rounds of the game, and after the first round, the players started each following round with the remaining fuel from the previous round. Moving each square in the path cost the players fuel, and the combined amount of fuel of both players with successfully delivering the resources represented the team performance. There were bonuses that the players could collect in their path to increase their fuel, and hazards that cost their fuel if they stepped on them.

Moreover, each player had information about the locations of six of out of 12 bonuses and hazards that the other player did not have. Therefore, in order to collect bonuses, avoid hazards, and successfully deliver the resources, they needed to work together and share the information that each had. However, sharing information also costs them fuel. Please see Figure 9 as an example of what participants saw at the end of each round for their game performance.

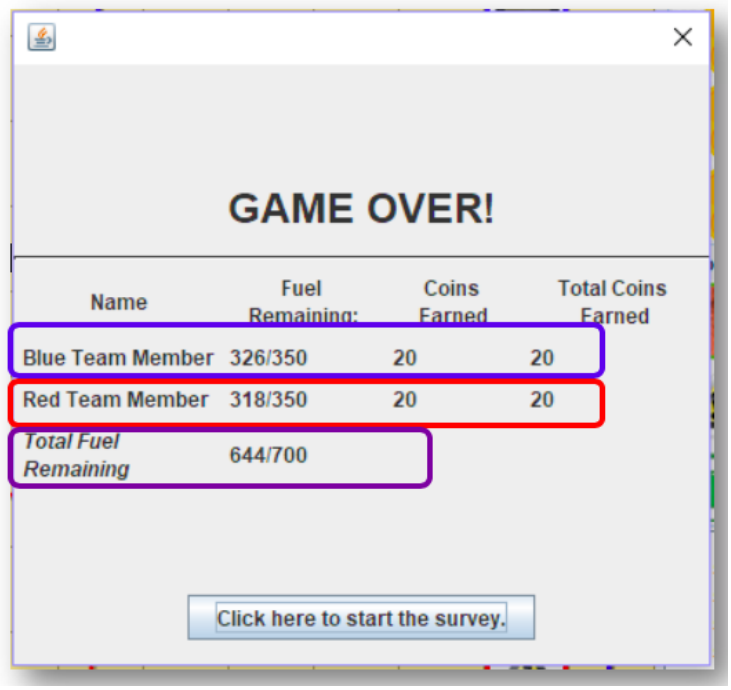

Figure 9. Overview of game performance at the end of each round.

Participants were told that the more fuel they had at the end of the game, the more compensation they would get. Specifically, they were told that they would

receive $7 as a starting compensation and could receive more up to $12 depending on the team performance. In reality, they would receive $12 regardless of the team performance. The deception was used to set a team goal with meaningful consequences and provide motivation to work together with their partner in order to achieve that goal.

Individual Goal. The individual goal was for the players to collect coins. Participants were told that if they collected more coins than their partner at the end of the game, they would be entered into a raffle to win an additional $20 gift card. Again in reality, they would be entered into a raffle regardless of how many coins they collected in the game. The deception was used in order to set an individual goal that conflicted with the team goal. All in all, the ultimate goal was for both players to successfully deliver resources using the shortest path with a high amount of fuel left, while collecting as many coins and bonuses as possible and avoiding hazards in the path. Please sees Figure 10 for a summary of game information and Figure 11 for a summary of reward opportunities.

	Team Goal	To save fuel and deliver regolith
	Individual Goal	To collect coins
	Starting position	
	Coins	Increases individual performance
	Hazard	Decreases team performance
	Fuel Bonus	Increases team performance
	Goal: Dark Regolith (H_20 rich)	Goal for team performance
	Goal: Light Regolith (O_2 rich)	Goal for team performance
	Destination	

Figure 10. A summary of game information.

Objective	Reward
Primary Team Objective	
Successfully deliver resources in 6 of 7 rounds	**$7**
Secondary Team Objectives	
Complete game with 200-399 combined fuel	**+$3 ($10 total)**
Complete game with 400+ combined fuel	**+$5 ($12 total)**
Individual Objective	
Player with the most gold coins at the end of 7 rounds will have an opportunity to be entered into a raffle for an additional $20 Amazon gift card	
Note: Players must complete the Primary Team Objective in order to receive additional Secondary Team Objective rewards.	

Figure 11. A summary of reward opportunities.

Reasons for Using Colored Trails. This game was chosen for the experiment and is different from other experimental or laboratory-based games used in the majority of trust research in that it captures the nature of collaborative relationships in the real world. First, each player in the team has information that the other player does not (i.e., the location of the bonuses and hazards). In order to achieve high team performance, they need to share unique information they have so that the other player can collect bonuses to increase fuel and also avoid hazards not to lose fuel. Furthermore, each player has to perform his or her part in the game by successfully delivering the resources using as little fuel as possible. In many real-

world teams, each member has a specialized role or expertise in the team and has to perform some portion of the collaborative work. The team as a whole as well as individual members have limited resources including financial, physical, social, human capital, and intellectual resources. Hence, the members are interdependent on each other and share their work and expertise to achieve a superordinate goal and high team performance.

Second, bonuses in the game are rewards, and hazards are mistakes. Like in the real world, there are consequences and variations associated with them as rewards and mistakes affect the team performance and compensation participants receive. Third, the game is designed for the players to have mixed motives such that their team goal (i.e., more fuel) and individual goal (i.e., more coins) conflict with each other. If they pursue the team goal by preserving fuel and finding the shortest path to the end point, they will not be able to collect coins. Likewise, if they pursue the individual goal by going around the board and collecting coins, they will lose fuel and achieve low team performance. In the real world, individuals can be in many roles and have membership in more than one team that are not always clear and compatible. Even within one role, they can have many goals that are aligned or in conflict with each other. Therefore, it creates a dynamic context where there is uncertainty about the other player, and they have to decide if and how much they trust the other player and engage in trusting behaviors. Taken together, this game is appropriate for the purpose of the experiment and balances

the need for experimental control with the goal of more closely replicating the nature of real-world collaborative working relationships.

Experimental Manipulations

In all seven rounds of the game, the computer shared all the information it had about the bonuses and hazards. It successfully delivered the resources except in the trust violation conditions. There were also some non-systematic variations in how long it took to draw the path to deliver the resources so as to make it seem that it was not methodical and computer-like. Additionally, at the end of all rounds except in trust repair condition of exceeding expectations, participants received a message saying, "You did great in delivering resources but didn't achieve maximum performance." The purpose of this message was to reinforce the manipulation of exceeding expectations as a trust repair strategy such that the violator clearly achieved beyond the typical performance in all other rounds to make up for the violation.

Trust Development. The first three rounds of the game were designed to be identical, other than small variations in timing, and were trust development conditions in which nothing negative happened. The computer did what it was supposed to do and successfully delivered the resources.

Trust Violation. Round 4 and Round 5 were designed as manipulations to violate trust. In Round 4, the computer broke participants' trust by committing either competence violation (N = 49) or integrity violation (N = 41), and

participants were randomly assigned to one of the conditions. These two types of violation were chosen because they were appropriate for the experiment such that they captured the dynamic and conflicting nature of the team and individual goals in the game. In the competence violation condition, the computer forgot to pick up the resources (team goal) and hence failed to deliver them. In the integrity violation, the computer accepted a bribe of coins (individual goal) from a Martian colonist in exchange for the resources. As a result, the team had to pay with fuel (team goal) to replace the missing resources. Thus, accepting the bribe in expense of team resources was considered a selfish act. In Round 5, participants were given the opportunity to choose a behavioral response to the trust violation: (1) retaliate against their teammate, (2) do nothing, (3) pick up slack for the team, (4) confront their teammate by sending him or her a direct message, and (5) involve a third party by asking the experimenter to confront their teammate.

Trust Repair. Round 6 and Round 7 were trust repair conditions, and they were the same as previous research has shown that consistency in trust repair effort is important in successfully repairing trust (Wildman et al., 2018). In both rounds, the computer attempted to repair trust either by exceeding expectations (N = 49) or through demonstration of concerns (N = 41), and participants were randomly assigned to one of the conditions. In an ideal situation, all trust repair strategies would be included in the experiment and compared with each other. However, realistically, this was not feasible because of time and sample size issues, as it

would create many more additional experimental conditions and require a much bigger sample.

In the exceeding expectations condition, participants received a message that their partner achieved maximum performance in delivering resources, and therefore, they would receive fuel bonuses (Figure 12). In the demonstration of concerns condition, they received a message from their partner thanking them for meeting the team goal and being a great teammate (Figure 13). After each round, they were asked open-ended questions regarding what happened in the round and why they thought it happened as a manipulation check to test whether the experimental manipulations of trust repair strategies were perceived as effective or not. Figure 14 summarizes the chronological flow of the experimental procedures.

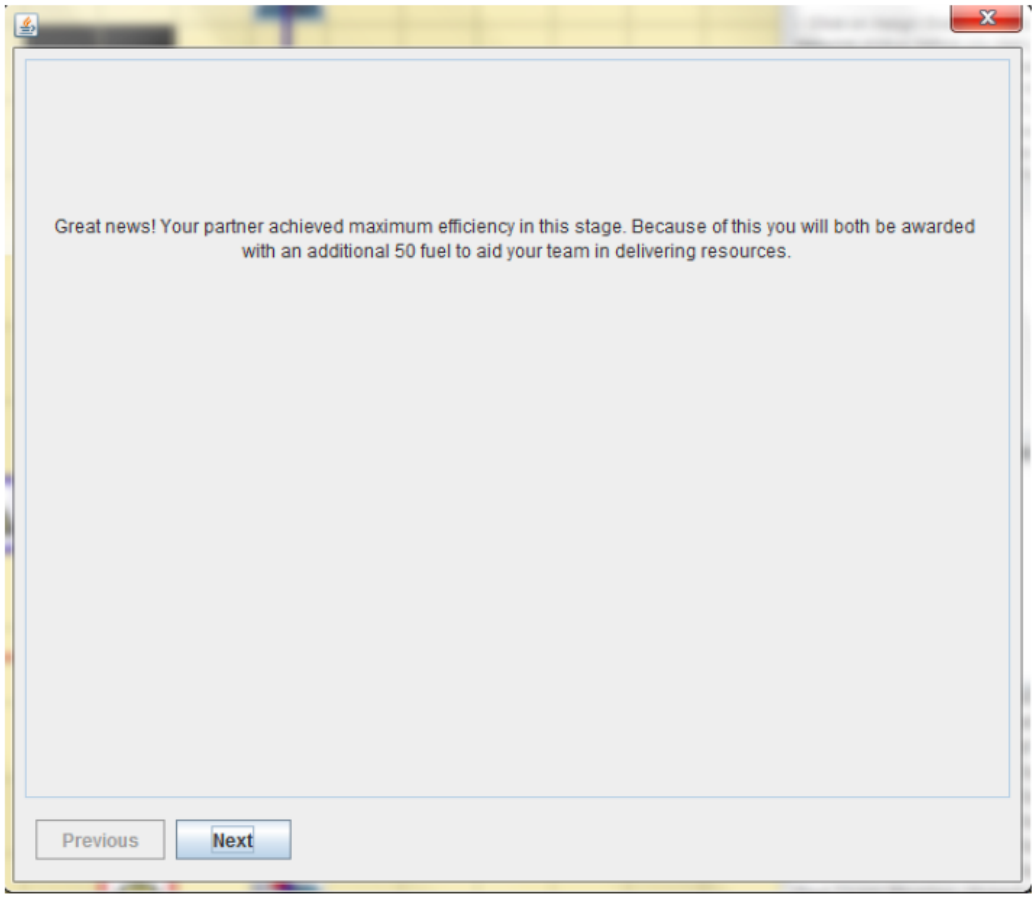

Figure 12. Message received in exceeding expectations condition.

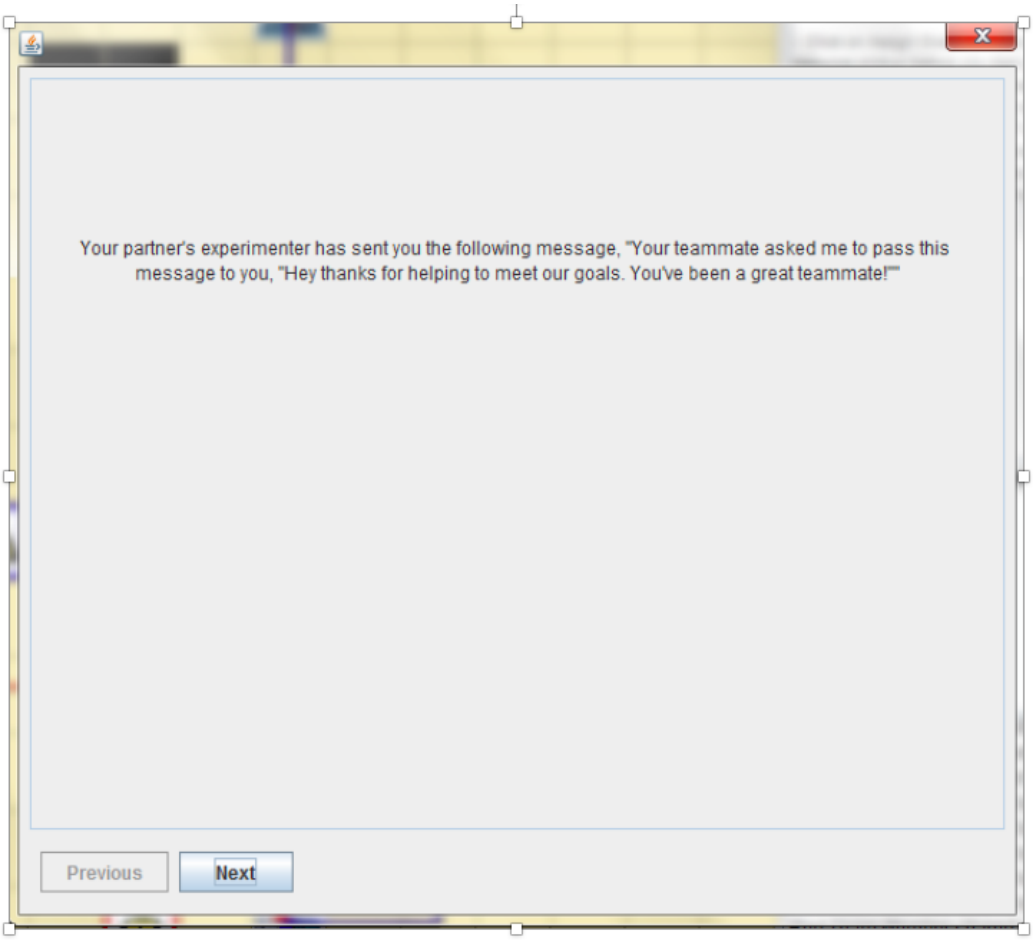

Figure 13. Message received in demonstration of concerns condition.

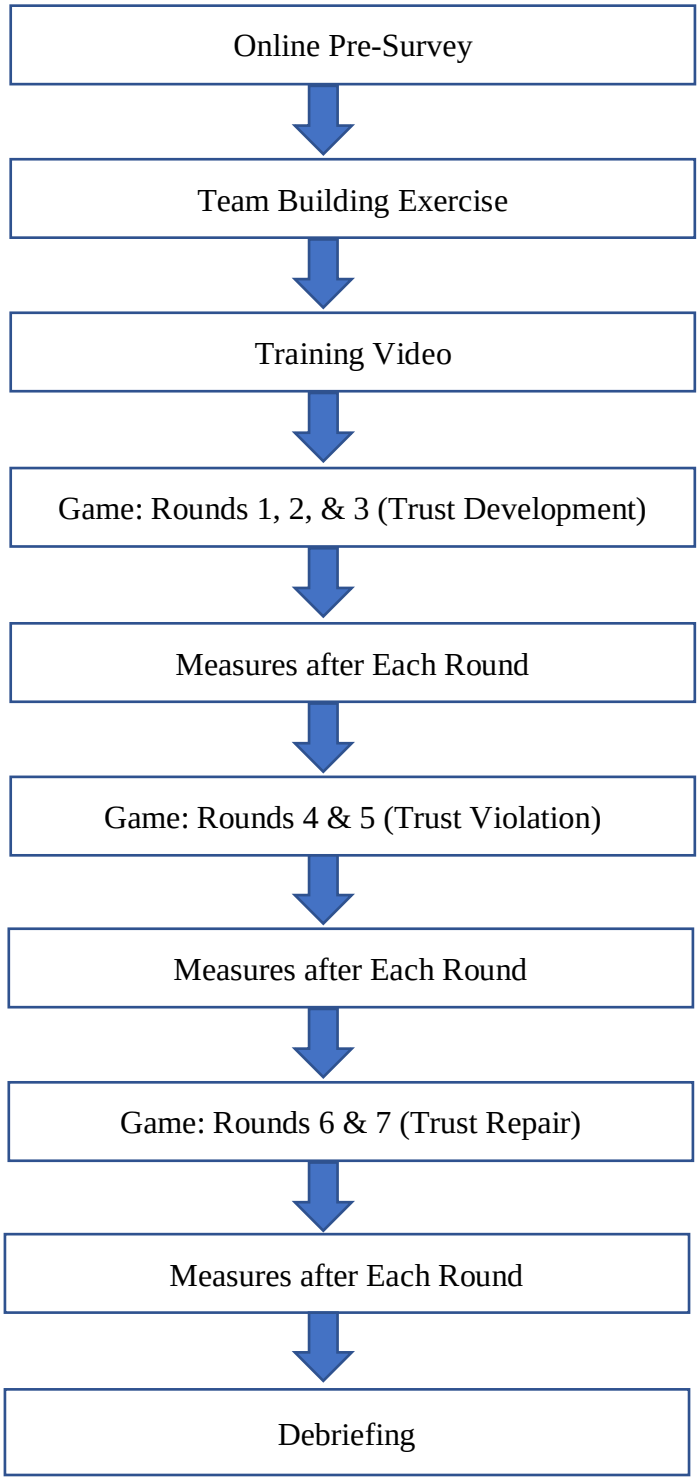
Online Pre-Survey
Team Building Exercise
Training Video
Game: Rounds 1, 2, & 3 (Trust Development)
Measures after Each Round
Game: Rounds 4 & 5 (Trust Violation)
Measures after Each Round
Game: Rounds 6 & 7 (Trust Repair)
Measures after Each Round
Debriefing

Figure 14. Chronological flow of the experimental procedures.

Measures

Values. In the online survey, the same measure of values from Study 1 was used where participants were presented with a list of 18 basic values from Gouveia et al. (2014). These values included sexuality, success, social support, knowledge, emotion, power, affectivity, religiosity, health, pleasure, prestige, obedience, personal stability, belonging, beauty, tradition, survival, and maturity. They were asked to rate how important they considered each value as a guiding principle in their life on a 7-point Likert scale (1 = *Completely unimportant*, 7 = *Of the utmost importance*; Appendix F).

Level of Trust. After each round of the game, participants' level of trust towards their partner in the game was measured on a 5-point Likert scale (1 = *Distrust very muc*h, 5 = *Trust very much*). The question was "To what extent do you trust your partner?" The level of trust will be calculated by averaging the level of trust after trust repair in Round 6 and Round 7. Separate analyses for each round will also be conducted.

Affective Reactions. After each round of the game, participants' affective reactions were measured using the International Positive and Negative Schedule – Short Form (Thompson, 2007). Participants were presented with 10 adjectives of positive and negative affect and were asked the extent to which they felt the listed affect after playing the game on a 5-point Likert scale (1 = *Not at all*, 5 = *A great*

deal). Positive affect included being active, alert, attentive, determined, and inspired (Cronbach's alpha = .90 in Round 6 and .91 in Round 7). Negative affect included being afraid, ashamed, hostile, nervous, and upset (Cronbach's alpha = .65 in Round 6 and .68 in Round 7). Average positive affect as well as average negative affect will be calculated.

Information Sharing. Each player knew six out of 12 locations of the bonuses and hazards in the game that the other person did not. Participants' openness will be measured by how much information they shared with their partner in the game. Although participants experienced trust repair in Round 6, they shared information about bonuses and hazards at the beginning of the game. They experienced trust repair at the end of the game by learning that their partner achieved maximum performance in the game (exceeding expectations) or by being thanked for being a good teammate (demonstration of concerns). Therefore, to test the effect of trust repair on information sharing, information sharing in Round 7 was used as an outcome.

Willingness to Work Together Again. Participants were asked whether they would like to continue working with their partner by an one-item question, "If you had the opportunity to play this game again, would you choose your current partner or a different partner?" with the two options to choose from: "I would choose to work with my current partner." and "I would choose to work with a different partner."

Results

Trust as Outcome

The mediating role of affect and moderating role of value in exceeding expectations and demonstration of concerns improving trust were tested again in Study 2. PROCESS macro for SPSS was used (Hayes, 2018), and unstandardized indirect effects were computed for 5,000 bootstrapped samples with a 95% confidence interval. To compare the effectiveness of exceeding expectations and demonstration of concerns, exceeding expectations was coded as 1 (N = 49), and demonstration of concerns was coded as 2 (N = 41). As demonstration of concerns was coded at a higher value, the independent variable would be named as demonstration of concerns.

Affect as Mediator. Regarding affect as a mediator in the relationship between two trust repair strategies and trust, the indirect effect of demonstration of concerns (.019) on average trust of Round 6 and Round 7 through average positive affect was not significant [-.042, .12]. The indirect effect of demonstration of concerns (.024) on average trust through average negative affect was not significant [-.13, .14].

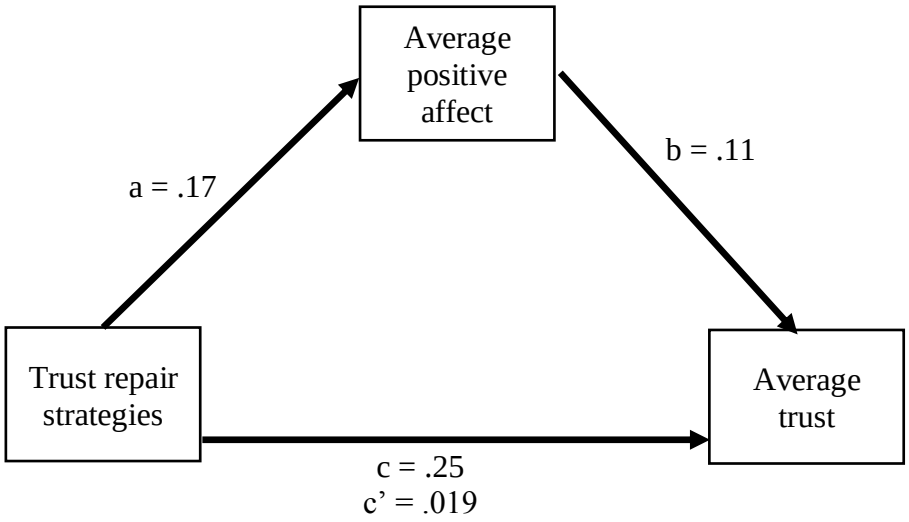

Figure 15. Indirect effect of average positive affect between demonstration of concerns and average trust.

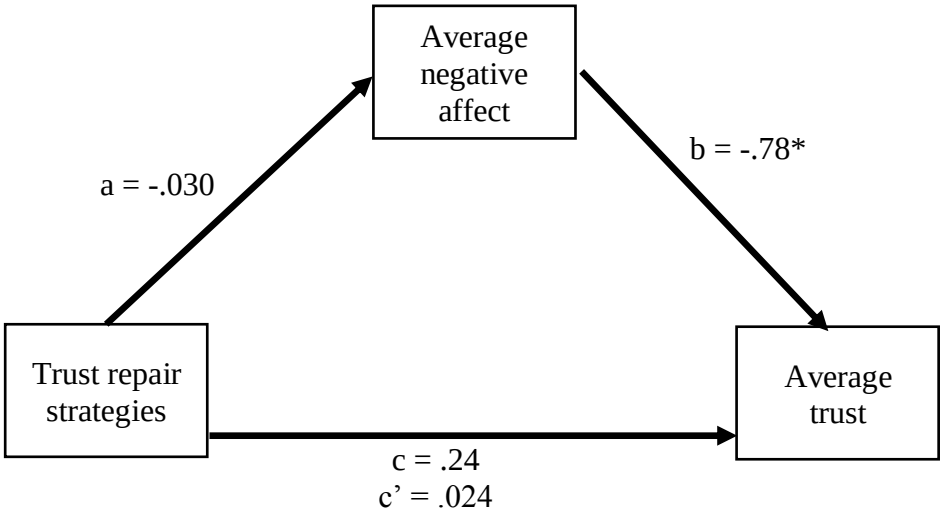

Figure 16. Indirect effect of average negative affect between demonstration of concerns and average trust. *$p < .01$

When analyses were conducted separately for Round 6 and Round 7, the results were also not significant. The two mediators, positive and negative affect, were also tested simultaneously in a multiple mediator model instead of testing them separately, but it did not change the patterns of the results. Additionally, the same analyses were conducted while controlling for the type of violation and level of trust in Round 4 (trust violation stage), but the results were also not significant. Finally, instead of using average affect and average trust of Round 6 and Round 7 (trust repair stages), the change in affect was used by subtracting affect in Round 4 (trust violation stage) from affect in Round 6 (trust repair stage), as well as affect in Round 4 (trust violation stage) from affect in Round 7 (trust repair stage). The change in trust was also calculated in the same way. However, the results were not significant. Taken together, the hypothesis that trust repair strategies would improve trust via (a) increased positive affect and (b) reduced negative affect was not supported.

Table 9. *A Summary of Indirect Effects Conducted Individually*

Mediation Pathway	Total Effect	Direct Effect	Indirect Effect	Boot SE	Boot LLCI	Boot ULCI
Demo of concerns -> Average positive affect -> Average trust	.019	.25	.019	.038	-.040	.11
Demo of concerns -> Average negative affect -> Average trust	.23	.24	.024	.066	-.13	.14
Demo of concerns -> Positive affect -> Trust in Round 6	.014	.26	.014	.034	-.042	.10
Demo of concerns -> Negative affect -> Trust in Round 6	.0037	.27	.0037	.078	-.19	.13
Demo of concerns -> Positive affect -> Trust in Round 7	.023	.24	.023	.044	-.046	.13
Demo of concerns -> Negative affect -> Trust in Round 7	.036	.23	.036	.062	-.10	.16
Demo of concerns -> Change in positive affect -> Change in trust (Rounds 6 - 4)	.0025	.23	.0025	.035	-.079	.068
Demo of concerns -> Change in negative affect -> Change in trust (Rounds 6 - 4)	-.052	.28	-.051	.057	-.18	.046
Demo of concerns -> Change in positive affect -> Change in trust (Rounds 7 - 4)	.015	.23	.015	.042	-.072	.10
Demo of concerns -> Change in negative affect -> Change in trust (Rounds 7 - 4)	-.023	.27	-.023	.048	-.13	.078

Success Value as Moderator. Regarding values as moderators in the mediating relationship between two trust repair strategies and trust via affect, the conditional indirect effect of demonstration of concerns (.021) on the average trust of Round 6 and Round 7 through average positive affect was not significantly moderated by success value [-.043, .13]. The conditional indirect effect of demonstration of concerns (.037) on the average trust through average negative affect was not significantly moderated by success value [-.085, .23]. When analyses were conducted separately for Round 6 and Round 7, the results were also not significant. Additionally, the same analyses were conducted while controlling for the type of violation (competence or integrity violation) and the level of trust in Round 4 (trust violation stage), it did not change the pattern of results. Taken together, when the trustor held success value, exceeding expectations was not perceived as significantly more effective in improving trust than demonstration of concerns via (a) increased positive affect or (b) reduced negative affect.

Affectivity Value as Moderator. The conditional indirect effect of demonstration of concerns (.045) on the average trust of through average positive affect was not significantly moderated by affectivity value [-.035, .16]. The conditional indirect effect of demonstration of concerns (.021) on the average trust through average negative affect was not significantly moderated by affectivity value [-.15, .11]. When analyses were conducted separately for Round 6 and Round 7, the results were also not significant. Additionally, the same analyses were

conducted while controlling for the type of violation (competence or integrity violation) and the level of trust in Round 4 (trust violation stage), it did not change the pattern of results. Taken together, when the trustor held affectivity value, demonstration of concerns was not perceived as significantly more effective in improving trust than exceeding expectations via (a) increased positive affect or (b) reduced negative affect.

Information Sharing as Outcome

At the end of Round 6, participants experienced trust repair for the first time and completed measures of positive and negative affect afterwards. Then, they decided whether and how much information they wanted to share with their partner at the beginning of Round 7. Therefore, affect in Round 6 was used as a mediator, and information sharing in Round 7 was used as an outcome.

The conditional indirect effect of demonstration of concerns (-.0034) on information sharing in Round 7 through positive affect in Round 6 was not significantly moderated by success value [-.092, .15]. The conditional indirect effect of demonstration of concerns (.20) on information sharing through negative affect was not significantly moderated by success value [-.12, .62]. The two mediators, positive and negative affect, were also tested simultaneously in a multiple mediator model instead of testing them separately, but it did not change the patterns of the results. Additionally, the same analyses were conducted while controlling for the type of violation in Round 4 (trust violation stage), but the

results were also not significant. Finally, instead of using affect in Round 6 and information sharing in Round 7 (trust repair stages), the change in information sharing was used as an outcome by subtracting information sharing in Round 5 (trust violation stage) from information sharing in Round 7 (trust repair stage). The changes in positive and negative affect were calculated by subtracting positive and negative affect in Round 4 (trust violation stage) from that in Round 6 (trust repair stage). However, the results were not significant. Taken together, when the trustor held success value, exceeding expectations was not perceived as significantly more effective in improving information sharing than demonstration of concerns via (a) increased positive affect or (b) reduced negative affect.

The conditional indirect effect of demonstration of concerns (-.027) on information sharing in Round 7 through positive affect in Round 6 was not significantly moderated by affectivity value [-.25, .19]. The conditional indirect effect of demonstration of concerns (.0092) on information sharing through negative affect was not significantly moderated by affectivity value [-.37, .40]. The two mediators, positive and negative affect, were also tested simultaneously in a multiple mediator model instead of testing them separately, but it did not change the patterns of the results. Additionally, the same analyses were conducted while controlling for the type of violation in Round 4, but the results were also not significant. Finally, when the changes in affect and information sharing were used instead of their absolute values, the results were not significant. Taken together,

when the trustor held affectivity value, demonstration of concerns was not perceived as significantly more effective in improving information sharing than exceeding expectations via (a) increased positive affect or (b) reduced negative affect.

Willingness to Work Together Again as Outcome

At the end of Round 7, participants reported whether they wanted to work again with the current partner or a different partner if they played the game again. Logistic regression using PROCESS macro for SPSS was used (Hayes, 2018), and conditional indirect effects were computed for 5,000 bootstrapped samples with a 95% confidence interval. In coding willingness to work together again, current partner was coded as 1, and different partner was coded as 2.

The conditional indirect effect of demonstration of concerns (-.064) on willingness to work together again through positive affect in Round 7 was not significantly moderated by success value [-.40, .15]. The conditional indirect effect of demonstration of concerns (-.038) on willingness to work together again through negative affect was not significantly moderated by success value [-.25, .18]. The two mediators, positive and negative affect, were also tested simultaneously in a multiple mediator model instead of testing them separately, but it did not change the patterns of the results. Additionally, the same analyses were conducted while controlling for the type of violation in Round 4 (trust violation stage), but the results were also not significant. Taken together, when the trustor held success

value, exceeding expectations was not perceived as significantly more effective in improving willingness to work together again than demonstration of concerns via (a) increased positive emotions or (b) reduced negative emotions. Therefore, Hypothesis 11 was not supported.

The conditional indirect effect of demonstration of concerns (-.11) on willingness to work together again through positive affect in Round 7 was not significantly moderated by affectivity value [-.46, .079]. The conditional indirect effect of demonstration of concerns (-.0097) on willingness to work together again through negative affect was not significantly moderated by affectivity value [-.22, .13]. The two mediators, positive and negative affect, were also tested simultaneously in a multiple mediator model instead of testing them separately, but it did not change the patterns of the results. Additionally, the same analyses were conducted while controlling for the type of violation in Round 4, but the results were also not significant. Taken together, when the trustor held affectivity value, demonstration of concerns was not perceived as significantly more effective in improving willingness to work together again than exceeding expectations via (a) increased positive emotions or (b) reduced negative emotions. Therefore, Hypothesis 12 was not supported.

Exploratory Analyses

To test the change in the level of trust and the change in information sharing across seven rounds of the game, growth curve modeling using Multilevel package in R was conducted. When conducting analyses, centering was used for predictors without meaningful value of zero to make the results more interpretable by comparing them to their mean.

Trust as Outcome

Null Model

Level 1:
$Trust = \pi_0 + e$
Level 2:
$\pi_0 = \beta_{00} + r_{00}$

Null model without any predictors was conducted, and its log-likelihood was -787.47 so that the following models could be compared to the null model.

Model 1

Level 1:
$Trust = \pi_0 + \pi_1 * Time\ (uncentered) + \pi_2 * Time^3\ (uncentered) + e$
Level 2:
$\pi_0 = \beta_{00} + r_{00}$
$\pi_1 = \beta_{10} + r_{01}$
$\pi_2 = \beta_{20} + r_{02}$

Time was added as a Level-1 predictor in order to calculate the change in trust across seven rounds of the game. As trust was expected to decrease after it was violated and to increase again after it was repaired. Therefore, a nonlinear trajectory was expected, and time with cubic function was also added as a Level-1

predictor. In addition, the change in trust was also expected to vary across individuals. Therefore, Model 1 was conducted with random intercepts and slopes. Results showed that log-likelihood was -760.22, and compared with the null model, Model 1 was a better fit with the data. When a nonlinear trajectory (π_2*Time^3) was tested, time was a significant predictor of the change in trust over time (β_{20} = .0067, $p < .05$). In other words, a nonlinear trajectory of trust over time was found.

One disadvantage of using growth curve modeling in testing a nonlinear relationship is that it could not pinpoint at which points trust increased and decreased. To identify at which point the changes occurred and their directions, means and standard deviations of trust across seven rounds of the game were calculated (Table 10) along with a histogram as an illustration of the trajectory of trust (Figure 17). It showed that trust started at a high level at the beginning and slowly increased in Rounds 1, 2, and 3 (trust development stages). In Rounds 4 and 5 where trust violation occurred, trust decreased. In Rounds 6 and 7 where trust repair occurred, trust increased again but never recovered to the same level as in the beginning.

Table 10. *Means and Standard Deviations of Trust over Seven Rounds of Colored Trials*

	M	*SD*
Round 1	4.02	.76
Round 2	4.12	.76
Round 3	4.19	.72
Round 4	2.97	1.11
Round 5	3.13	1.03
Round 6	3.63	.96
Round 7	3.74	1.01

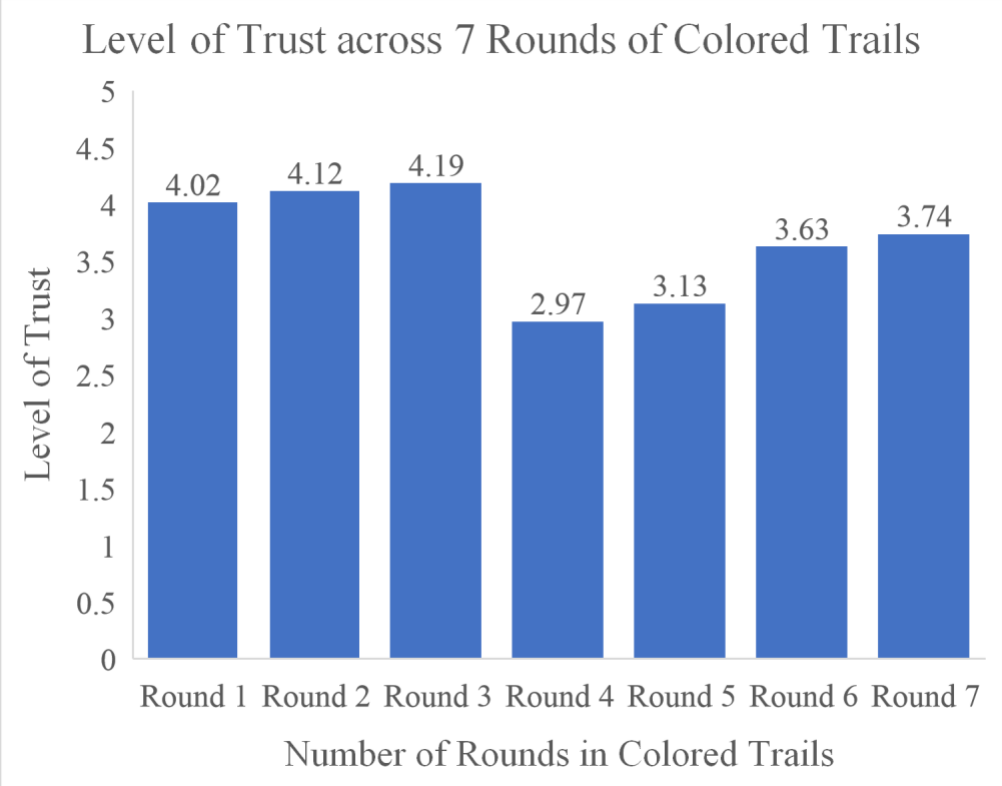

Figure 17. Illustration of the trajectory of trust.

Model 2

Level 1:

$\text{Trust} = \pi_0 + \pi_1 * \text{Time (uncentered)} + \pi_2 * \text{Time}^3 \text{ (uncentered)} + e$

Level 2:

$\pi_0 = \beta_{00} + \beta_{01} * \text{Success (grand mean centered)} + r_0$

$\pi_1 = \beta_{10} + \beta_{11} * \text{Success (grand mean centered)} + r_1$

$\pi_2 = \beta_{20} + \beta_{21} * \text{Success (grand mean centered)} + r_2$

In Model 2, success value was added as a Level-2 predictor to see if it predicted the change in trust over time. Model 2 was conducted using random intercepts and slopes as it was expected that the change in trust over time would vary depending on high and low success value. Results showed that log-likelihood was -771.72. Model 2 was a better fit with the data than the null model but not a better fit than Model 1. Therefore, results should be interpreted with caution. Success was not a significant predictor of the nonlinear trajectory of trust over time ($\beta_{21} = .00081$, $p = .46$). In order to examine whether such result differed depending on the trust repair strategies, the data were separated into two separate files: one file including all participants who received exceeding expectations and another file including all participants who received demonstration of concerns. Then, the same analysis was conducted. It was found that success was a significant predictor of the nonlinear trajectory of trust over time for those receiving exceeding expectations ($\beta_{21} = .0042$, $p = .002$).

Model 3

Level 1:

$\text{Trust} = \pi_0 + \pi_1 * \text{Time (uncentered)} + \pi_2 * \text{Time}^3 \text{ (uncentered)} + e$

Level 2:

$\pi_0 = \beta_{00} + \beta_{01} * \text{Affectivity (grand mean centered)} + r_0$

$\pi_1 = \beta_{10} + \beta_{11} * \text{Affectivity (grand mean centered)} + r_1$

$\pi_2 = \beta_{20} + \beta_{21} * \text{Affectivity (grand mean centered)} + r_2$

In Model 3, affectivity value was added as a Level-2 predictor to see if it predicted the change in trust over time. Model 3 was conducted using random intercepts and slopes as it was expected that the change in trust over time would vary depending on high and low affectivity value. Results showed that log-likelihood was -771.02. Model 3 was a better fit with the data than the null model but not a better fit than Model 1. Therefore, results should be interpreted with caution. Affectivity was not a significant predictor of the nonlinear trajectory of trust over time ($\beta_{21} = .00022$, $p = .82$).

Model 4

Level 1:

$\text{Trust} = \pi_0 + \pi_1 * \text{Time (uncentered)} + \pi_2 * \text{Time}^3 \text{ (uncentered)} + e$

Level 2:

$\pi_0 = \beta_{00} + \beta_{01} * \text{Repair Type} + r_0$

$\pi_1 = \beta_{10} + \beta_{11} * \text{Repair Type} + r_1$

$\pi_2 = \beta_{20} + \beta_{21} * \text{Repair Type} + r_2$

In Model 4, repair type (exceeding expectations or demonstration of concerns) was added as a Level-2 predictor to see if it predicted the change in trust

over time. Model 4 was conducted using random intercepts and slopes as it was expected that the change in trust over time would vary depending on the type of trust repair strategies. Results showed that log-likelihood was -768.01. Model 4 was a better fit with the data than the null model but not a better fit than Model 1. Therefore, results should be interpreted with caution. Repair type was not a significant predictor of the nonlinear trajectory of trust over time (β_{21} = .00038, p = .85).

To illustrate the results, low and high success and affectivity values were created using their distributions of the scores. The scores in the 25th percentile were coded as low values, and the scores in the 75th percentile were coded as high values. Then, the change of trust over time was observed for each trust repair strategy (exceeding expectations vs. demonstration of concerns) and for each value (high vs. low success value and high vs. low affectivity value). Based on Figure 18 and Figure 19, an interesting observation was that those with high success value experienced a steeper decrease in trust at Time 4 (trust violation stage) and a steeper increase afterwards. In other words, if they cared about success, they would experience the effect of trust violation more strongly. Therefore, combined with the results from Model 2, the hypothesis that exceeding expectations would be more effective in improving trust for those with success value was supported.

Based on Figure 20 and 21, the trajectories of trust across seven time points did not seem to be different across high and low levels of affectivity value and the

type of trust repair strategies. Therefore, the hypothesis that demonstration of concerns would be more effective in improving trust for those with affectivity value was not supported. However, an interesting observation was that those with high affectivity value experienced a steeper decrease in trust at Time 4 (trust violation stage) and a steeper increase afterwards. In other words, if they cared about building connection and relationship, they would experience the effect of trust violation more strongly.

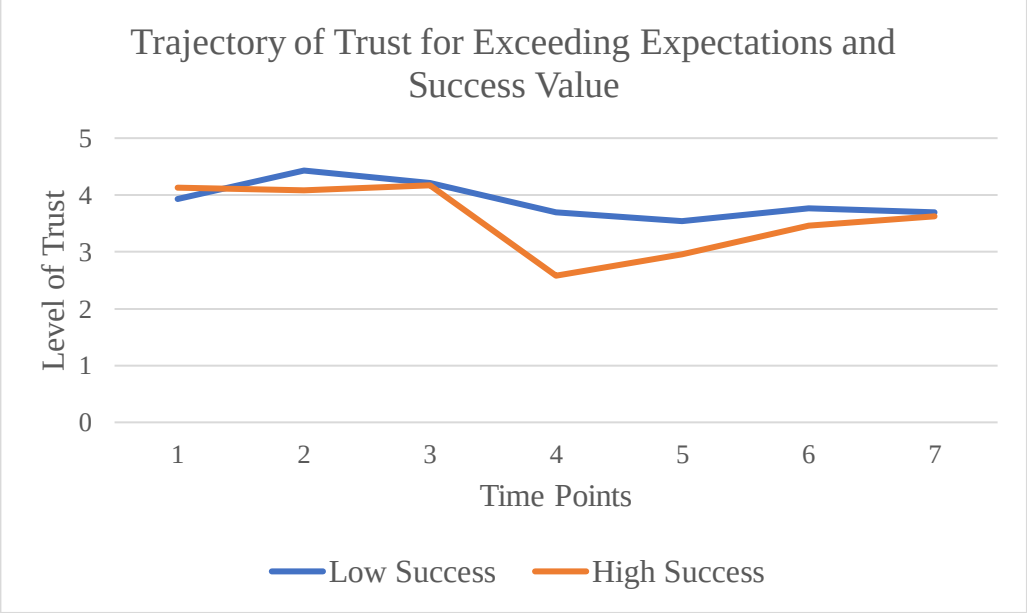

Figure 18. Trajectory of trust for exceeding expectations and success value.

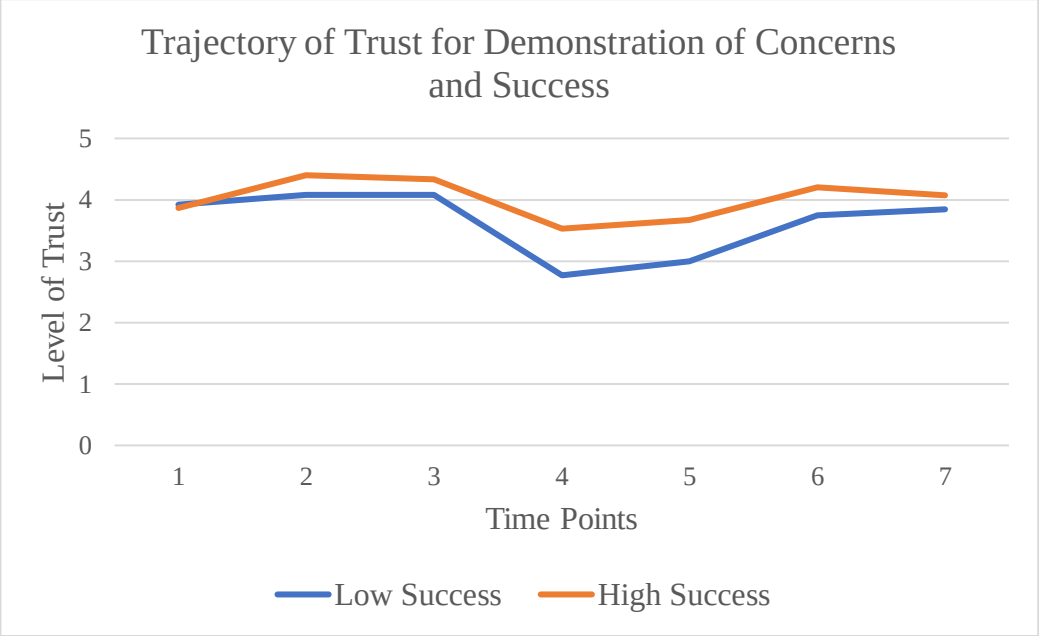

Figure 19. Trajectory of trust for demonstration of concerns and success value.

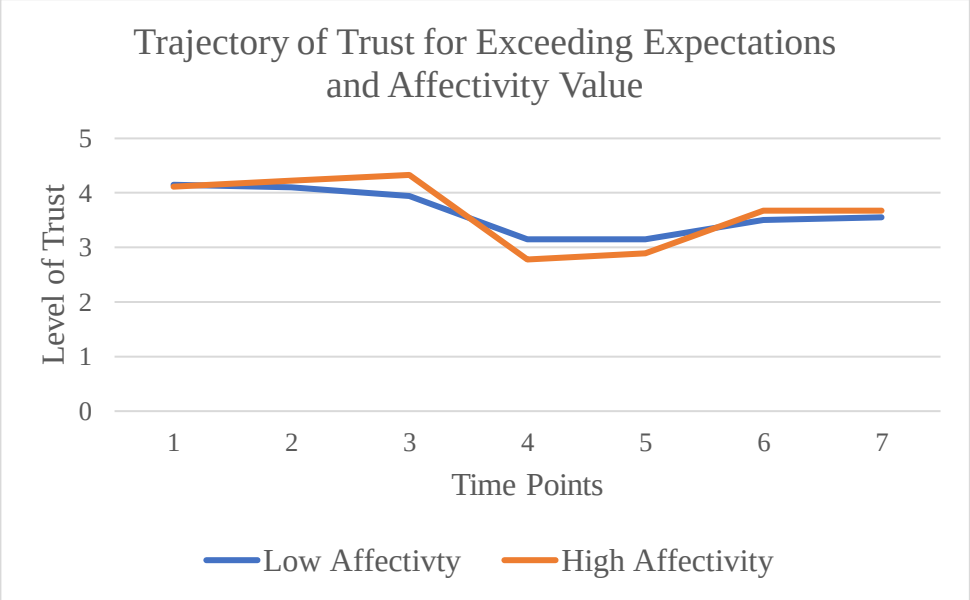

Figure 20. Trajectory of trust for exceeding expectations and affectivity value.

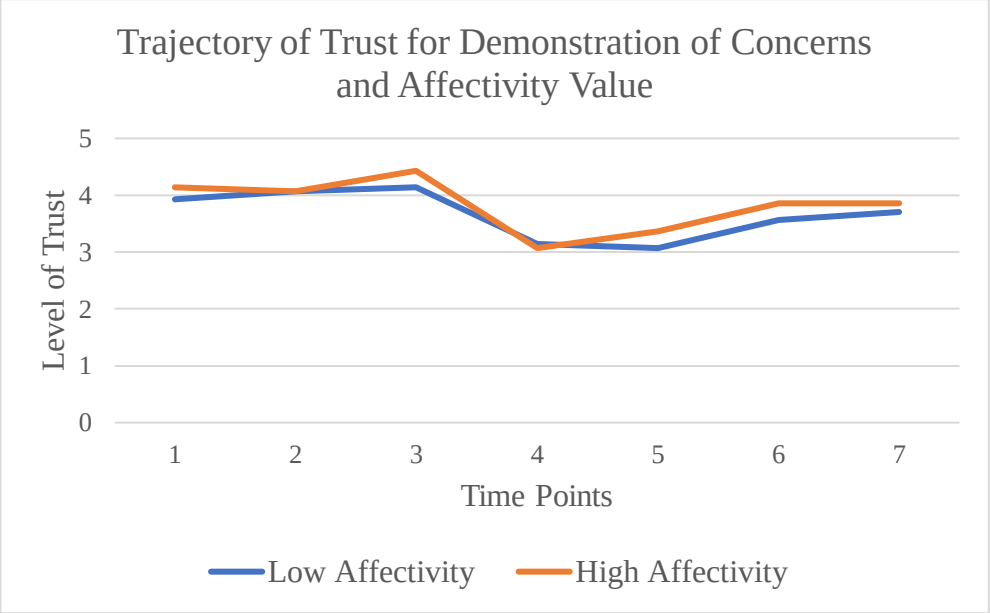

Figure 21. Trajectory of trust for demonstration of concerns and affectivity value.

Information Sharing as Outcome

<u>Null Model</u>

Level 1:
Info Share = π_0 + e
Level 2:
$\pi_0 = \beta_{00} + r_{00}$

Null model without any predictors was conducted, and its log-likelihood was -1053.46 so that the following models could be compared to the null model.

Model 1

Level 1:

Info Share = $\pi_0 + \pi_1$*Time (uncentered) + π_2*Time^3 (uncentered) + e

Level 2:

$\pi_0 = \beta_{00} + r_{00}$

$\pi_1 = \beta_{10} + r_{01}$

$\pi_2 = \beta_{20} + r_{02}$

Time was added as a Level-1 predictor in order to calculate the change in information sharing across seven rounds of the game. Like trust, information sharing was expected to decrease after it was violated and to increase again after it was repaired. Therefore, a nonlinear trajectory was expected, and time with cubic function was also added as a Level-1 predictor. Results showed that log-likelihood was -1045.23, and compared with the null model, Model 1 was a better fit with the data. When a nonlinear trajectory (π_2*Time^3) was tested, time was a significant predictor of the change in information sharing over time ($\beta_{20} = .0066$, $p < .001$). In other words, a nonlinear trajectory of information sharing over time was found.

To identify at which point the changes occurred and their directions, means and standard deviations of information sharing across seven rounds of the game were calculated (Table 11) along with a histogram as an illustration of the trajectory of information sharing (Figure 22). Unlike trust, information sharing did not follow a clear pattern at the beginning. However, it decreased in Rounds 4 and 5 where trust violation occurred and increased again in Rounds 6 and 7 where trust repair occurred.

Table 11. *Means and Standard Deviations of Information Sharing over Seven Rounds of Colored Trials*

	M	*SD*
Round 1	2.96	2.03
Round 2	4.12	1.82
Round 3	3.27	1.83
Round 4	3.43	1.78
Round 5	2.82	1.79
Round 6	3.28	1.88
Round 7	4.20	1.73

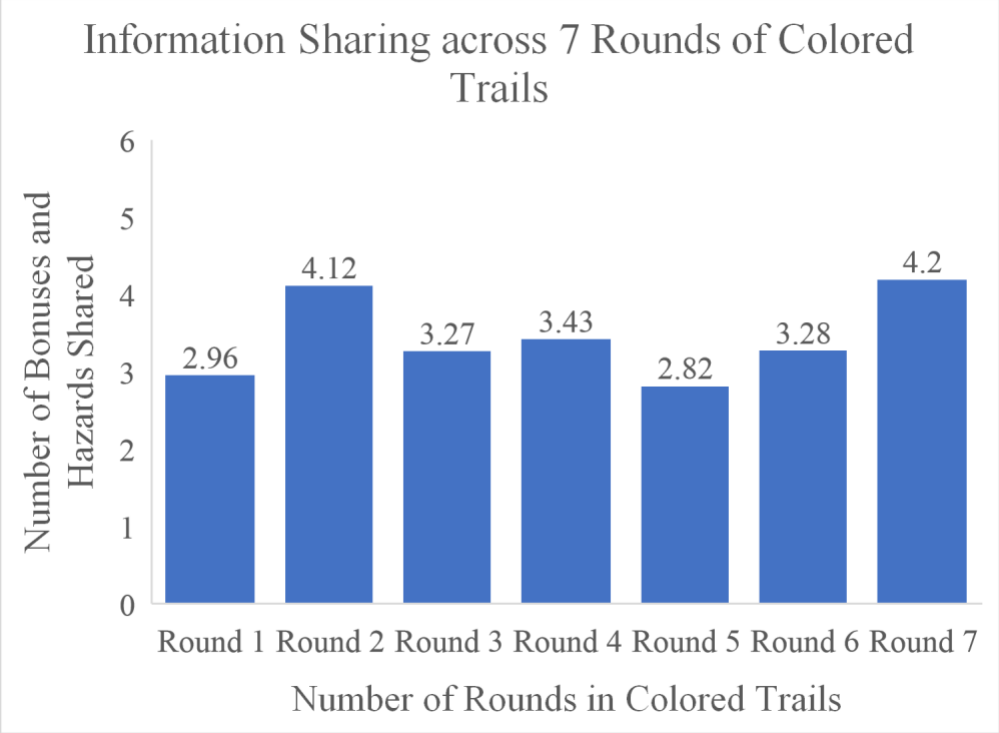

Figure 22. Illustration of the trajectory of information sharing.

Model 2

Level 1:
Info Share = $\pi_0 + \pi_1$*Time (uncentered) + π_2*Time^3 (uncentered) + e
Level 2:
$\pi_0 = \beta_{00} + \beta_{01}$*Success (grand mean centered) + r_0
$\pi_1 = \beta_{10} + \beta_{11}$*Success (grand mean centered) + r_1
$\pi_2 = \beta_{20} + \beta_{21}$*Success (grand mean centered) + r_2

In Model 2, success value was added as a Level-2 predictor to see if it predicted the change in information sharing over time. Results showed that log-likelihood was -1051.39, and Model 2 was not a better fit with data than either the null model or Model 1. Therefore, results should be interpreted with caution. Model 2 was conducted using random intercepts and slopes as it was expected that the change in information sharing over time would vary depending on high and low success value. Success was a significant predictor of the nonlinear trajectory of information sharing over time (β_{21} = -.0035, p = .03). In addition, in using two separate files for the two trust repair strategies, success was a significant predictor of the nonlinear trajectory of information sharing over time for those receiving exceeding expectations (β_{21} = -.0058, p = .01).

Model 3

Level 1:
Info Share = $\pi_0 + \pi_1$*Time (uncentered) + π_2*Time^3 (uncentered) + e
Level 2:
$\pi_0 = \beta_{00} + \beta_{01}$*Affectivity (grand mean centered) + r_0
$\pi_1 = \beta_{10} + \beta_{11}$*Affectivity (grand mean centered) + r_1
$\pi_2 = \beta_{20} + \beta_{21}$*Affectivity (grand mean centered) + r_2

In Model 3, affectivity value was added as a Level-2 predictor to see if it predicted the change in information sharing over time. Results showed that log-likelihood was -1052.85, and Model 2 was a better fit with data than the null model but not Model 1. Therefore, results should be interpreted with caution. Model 3 was conducted using random intercepts and slopes as it was expected that the change in information sharing over time would vary depending on high and low affectivity value. Affectivity was not a significant predictor of the nonlinear trajectory of information sharing over time ($\beta_{21} = .00061$, $p = .67$).

Model 4

Level 1:

Info Share = $\pi_0 + \pi_1$*Time (uncentered) + π_2*Time^3 (uncentered) + e

Level 2:

$\pi_0 = \beta_{00} + \beta_{01}$*Repair type (grand mean centered) + r_0

$\pi_1 = \beta_{10} + \beta_{11}$*Repair type (grand mean centered) + r_1

$\pi_2 = \beta_{20} + \beta_{21}$*Repair type (grand mean centered) + r_2

In Model 4, repair type was added as a Level-2 predictor to see if it predicted the change in information sharing over time. Results showed that log-likelihood was -1051.61, and Model 4 was a better fit with data than the null model but not Model 1. Therefore, results should be interpreted with caution. Model 4 was conducted using random intercepts and slopes as it was expected that the change in information sharing over time would vary depending on the type of repair

strategies. Repair type was not a significant predictor of the nonlinear trajectory of information sharing over time (β_{21} = -.0026, p = .39).

To illustrate the results, low and high success and affectivity values were created using their distributions of the scores. The scores in the 25th percentile were coded as low values, and the scores in the 75th percentile were coded as high values. Then, the change of information sharing over time was observed for each trust repair strategy (exceeding expectations vs. demonstration of concerns) and for each value (high vs. low success value and high vs. low affectivity value). Based on Figure 23 and Figure 24, overall trends across seven time points showed that the level of information sharing was not different between low and high success value for exceeding expectations. However, it was higher for those who received demonstration of concerns and who had high success value. Therefore, Hypothesis 9 that exceeding expectations would be more effective in improving information sharing for those with high success value was not supported. Based on Figure 25 and Figure 26, the level of information sharing was higher for those who received exceeding expectations and who had high affectivity value. However, it was not different between low and high affectivity value for demonstration of concerns. Therefore, Hypothesis 10 that demonstration of concerns would be more effective in improving information sharing for those with high affectivity value was also not supported.

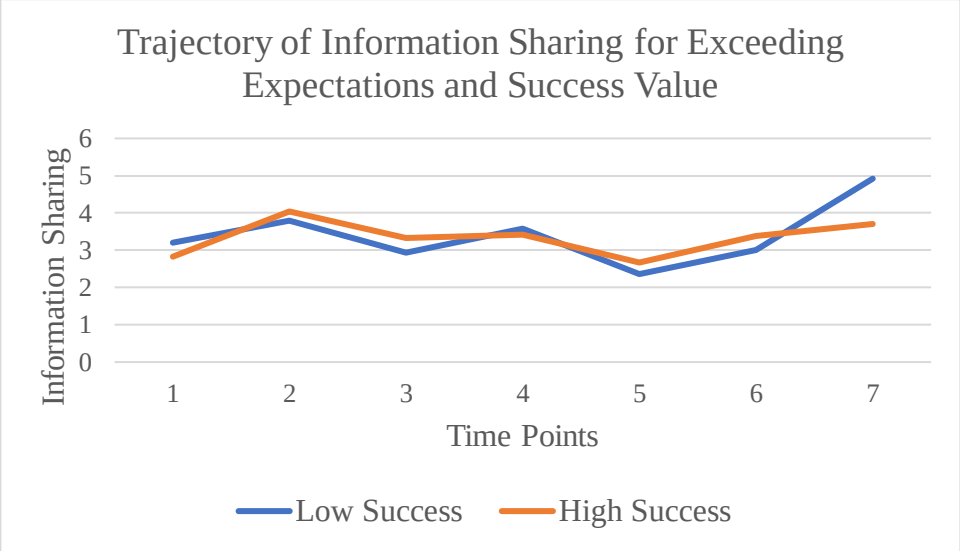

Figure 23. Trajectory of information sharing for exceeding expectations and success value.

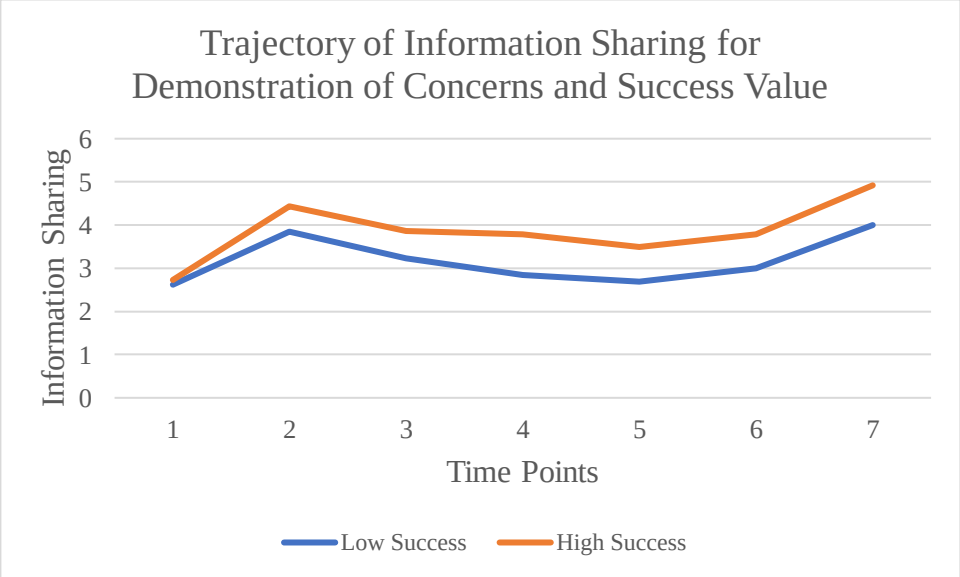

Figure 24. Trajectory of information sharing for demonstration of concerns and success value.

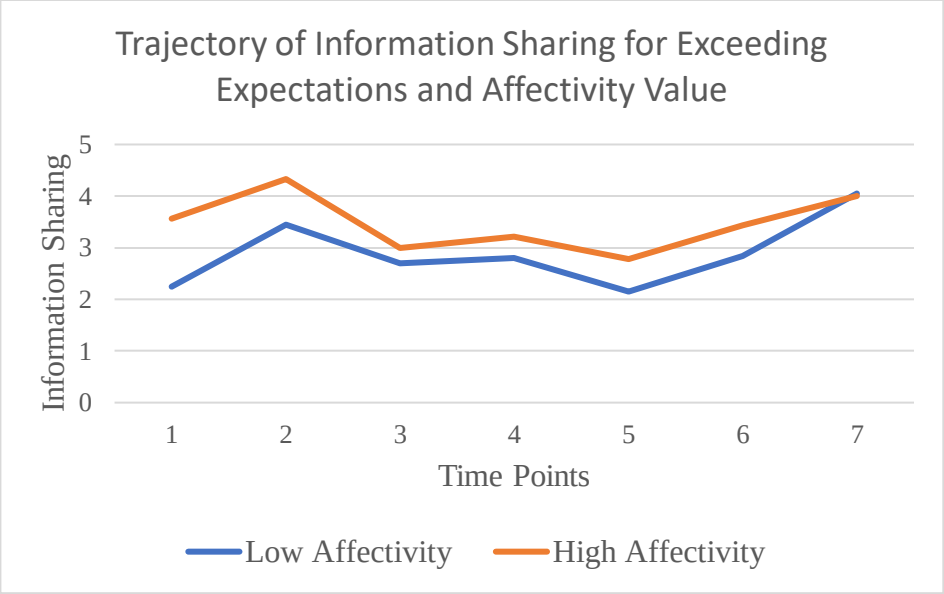

Figure 25. Trajectory of information sharing for exceeding expectations and affectivity value.

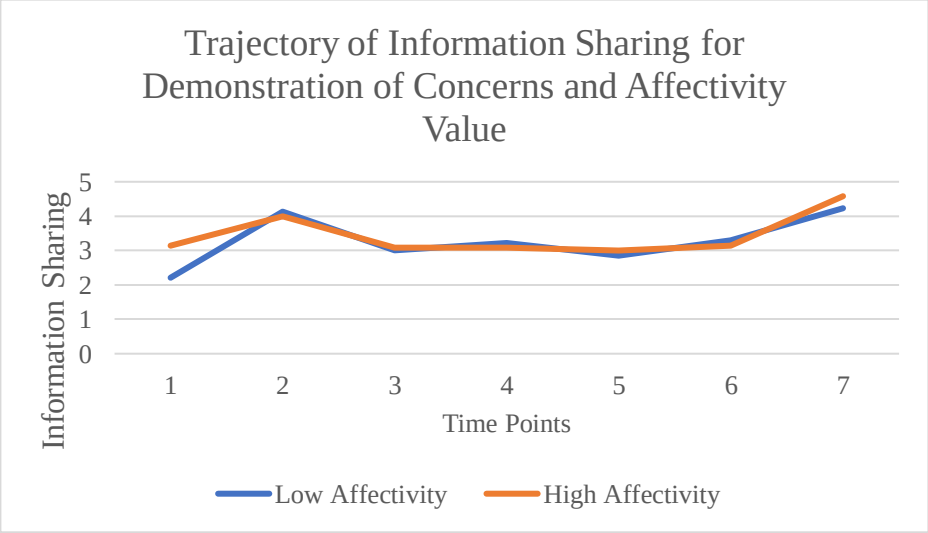

Figure 26. Trajectory of information sharing for demonstration of concerns and affectivity value.

Table 12. *A Summary of Results in Study 2*

Hypotheses	Descriptions	Finding
H7	When the trustor holds success value, exceeding expectations will be perceived as more effective in improving trust than demonstration of concerns via (a) increased positive emotions and (b) reduced negative emotions.	Partial support; affect as mediator not tested in growth curve modeling
H8	When the trustor holds affectivity value, demonstration of concerns will be perceived as more effective in improving trust than exceeding expectations via (a) increased positive emotions and (b) reduced negative emotions.	Not supported
H9	When the trustor holds success value, exceeding expectations will be perceived as more effective in improving information sharing than demonstration of concerns via (a) increased positive emotions and (b) reduced negative emotions.	Partial support for success predicting the change in information sharing
H10	When the trustor holds affectivity value, demonstration of concerns will be perceived as more effective in improving information sharing than exceeding expectations via (a) increased positive emotions and (b) reduced negative emotions.	Not supported
H11	When the trustor holds success value, exceeding expectations will be perceived as more effective in improving willingness to work together again than demonstration of concerns via (a) increased positive emotions and (b) reduced negative emotions.	Not supported
H12	When the trustor holds affectivity value, demonstration of concerns will be perceived as more effective in improving willingness to work together again than exceeding expectations via (a) increased positive emotions and (b) reduced negative emotions.	Not supported

Discussion

Study 2 was designed to address some of the limitations of Study 1 and examine causal relationships of exceeding expectations and demonstration of concerns by conducting a controlled laboratory-based study using a collaborative game called Colored Trails. It also examines additional outcomes such as trust, information sharing, and willingness to work together again. Although Study 1 found that exceeding expectations improved trust via increased positive emotions, the result was not replicated in Study 2. Furthermore, the effects of exceeding expectations and demonstration of concerns on trust, information sharing, and willingness to work together again through positive affect and negative affect were not significantly moderated by success or affectivity values.

One limitation of the current study is the lack of a control group where participants experience trust violation but without experiencing trust repair. Moreover, the effectiveness of exceeding expectations and demonstration of concerns could not be compared with that of other repair strategies, such as apology and account. Therefore, with a large sample, future research should incorporate other trust repair strategies, such as apology and account, to compare their effectiveness with the effectiveness of exceeding expectations and demonstration of concerns. It will also be interesting to study the effects of a combination of trust repair strategies (e.g., apology and exceeding expectations vs. apology and demonstration of concerns) instead of testing them separately.

Similarly, future research might want to study a combination of values individuals have in life (e.g., success and affectivity values instead of success value alone) as they have multiple identities and values at the same time (Chao & Moon, 2005).

While considering the limitation, when the changes in trust and information sharing across seven rounds of the game were tested, their nonlinear trajectories were as expected. Overall, there was an increase in trust and information sharing during trust development stages, a decrease during trust violation stages, and an increase again during trust repair stages. As an interesting observation, the difference between trust and information sharing in their trajectories was that trust started at a high level in Round 1 (M = 4.02, SD = .76), whereas information sharing started at a relatively low level in Round 1 (M = 2.96, SD = 2.03). Therefore, future research can examine factors predicting them. For example, propensity to trust might predict trust as those with high propensity to trust will have high trust at the beginning. Risk-taking and openness might predict information sharing as those with low tendencies of taking risks and being open to new experiences will share less information at the beginning.

It was also found that success value was a significant predictor of the nonlinear trajectory of information sharing over time. In addition, success value was a significant predictor of nonlinear trajectory of trust over time for those receiving exceeding expectations as trust repair. However, growth curve modeling cannot pinpoint at which point the changes occur and the magnitudes of the

changes. Instead, it only identifies whether a linear or nonlinear trajectory exists and reports the overall trajectory. Hence, the predictors also predict the overall trajectory and cannot predict specific changes in the trajectory. For example, success value could not predict the increase or decrease in information sharing at specific time points. Therefore, future research should use a different method of analysis, such as latent change score analysis, which allows prediction of the difference scores. For example, it will be interesting to study whether latent success value predicts the latent difference in trust and information sharing at specific time points such as before and after trust repair. Future research can also examine whether the latent difference in affect predicts the latent difference in trust before and after trust repair.

Another factor that future research should consider is that there were a lot of game-related information for participants to absorb in a short amount of time. The training video involved only texts and pictures and was not interactive. Participants also did not play any trials to get themselves familiar with the game. Therefore, their ability to play the game and familiarity with the game might influence their performance in the game. In the current study, there were manipulation checks throughout the game that asked participants what happened in the game to test if they understood the game and if the experimental manipulations were effective. There were variations in response to the deception that they were playing with another person from University of Akron. There were participants who were

surprised after debriefing that they were playing with a computer, whereas there were participants who were suspicious that something else might be going on but did not know that they were playing with a computer. Most participants were able to explain what kind of trust repair they experienced. Therefore, although the experimental manipulations in the current study could be considered effective, future research should control for the ability to understand and play the game while testing the experimental effects. Future research can also improve the training video by making it more interactive and including game trials for participants to play so that their ability to play the game and familiarity with it can be ruled out as an alternative explanation for the results.

In terms of practical implications, success value was found to play a role in the change in trust and information sharing over time. If the trustor values success, the violator is recommended to go above and beyond and accomplish the collaborative work to repair the trust. There are different ways the violator can go above and beyond. For instance, the violator can put in extra effort into performing the tasks, bring in more resources, and other task-oriented ways to make the collaborative work successful. Moreover, it has been shown that information sharing improves performance (Mesmer-Magnus & DeChurch, 2009). A third party, such as a leader or manager, can encourage and facilitate information sharing between individuals to help develop trust quickly, especially if information sharing tends to be low at the beginning of the collaboration. Similarly, as part of the trust

repair process, the manager can ensure that important information are still shared and that performance is not negatively affected, although trust and the relationship between the trustor and violator might not improve.

Managing emotions can also be helpful in reducing the negative effects of trust violation. Individuals can be trained or made aware of different strategies to regulate emotions, such as shifting attention away from negative emotions and consequences of the violation, reappraising the violation by attributing it to something outside of one's control, and talking with others (Jiang, Zhang, & Tjosvold, 2013; McCance, Nye, Wang, Jones, & Chiu, 2013). It has been found that those who had high emotion regulation were able to manage conflicts well and achieve high performance as they were less likely to be distracted by negative emotions and use information gathered from conflicts to improve performance (Jiang et al., 2013). Thus, in addition to trust repair strategies, emotion regulation can be engaged by the trustor, violator, or a third party to further facilitate trust repair process.

In conclusion, the current research includes two studies that examine the use and perceived effectiveness of exceeding expectations and demonstration of concerns by examining their relationships with different mediators, moderators, and outcomes. Although most hypotheses were not supported in the current research, it shows that individuals do use them in their collaborative relationships, hence calling for more research to further understand them. All in all, the current research

hopes to highlight the promising effects of exceeding expectations and demonstration of concerns as trust repair strategies in building trusting and successful collaborative relationships.

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Appendix A

Perceived Effectiveness of Trust Repair Strategies

Instruction: When considering all of my experiences, people have tried to regain my trust after losing it by:

	People have successfully regained my trust after losing it using this approach.		If yes, how effectiveness was this approach at regaining your trust?				
	Yes	No	Very ineffective	Somewhat ineffective	Neither ineffective nor effective	Somewhat effective	Very effective
Providing an account, reason, or explanation for the violation.							
Providing a sincere apology for the violation.							
Providing compensation (e.g., gifts, money, favors) to make up for the violation.							
Putting in extra effort or going above and beyond on tasks to make up for the violation.							

Showing extra benevolence, consideration, and kindness. Spending more time together either at work or socially in order to strengthen interpersonal bonds. Involving a third party (e.g., supervisor, colleague, mediator) to help resolve the conflict. Something else not described in this list (please describe:)		

Appendix B

Ranking of Perceived Effectiveness of Trust Repair Strategies

Instructions: Please RANK how effective each of the following behaviors are at restoring trust in general. Place the most effective option at the top (1 = most effective) and the least effective option at the bottom (7 = least effective) by clicking and dragging each option.

- Providing an account, reason, or explanation for the violation.
- Providing a sincere apology for the violation.
- Providing compensation (i.e., gifts, money, favors) to make up for the violation.
- Putting in extra effort or going above and beyond on tasks to make up for the violation.
- Showing extra benevolence, consideration, and kindness.
- Spending more time together either at work or socially in order to strengthen interpersonal bonds.
- Involving a third party (e.g., supervisor, colleagues, mediator) to help resolve the conflict.

Appendix C

Critical Incidents of Trust Repair

Instructions: Please describe the situation in which someone was able to regain your trust after first losing it. Provide as much detail as you can and would like.

1. Please briefly describe this person.
2. What were you working on together when trust was lost and then regained?
3. What exactly did they do to lose your trust?
4. What exactly did they do to regain your trust?

Appendix D

Trust Repair Strategies Used in Critical Incidents

Instruction: What did the person do to regain your trust?

	Yes	No
Providing an account, reason, or explanation for the violation.		
Providing a sincere apology for the violation.		
Providing compensation (e.g., gifts, money, favors) to make up for the violation.		
Putting in extra effort or going above and beyond on tasks to make up for the violation.		
Showing extra benevolence, consideration, and kindness.		
Spending more time together either at work or socially in order to strengthen interpersonal bonds.		
Involving a third party (e.g., supervisor, colleague, mediator) to help resolve the conflict.		
Something else not described in this list (please describe:)		

Appendix E

Affective and Cognitive Reactions in Critical Incidents

Instruction: To what extent did you feel the following things

	BEFORE trust was regained.					AFTER trust was regained.				
	Not at all	A little	A moderate amount	A lot	A great deal	Not at all	A little	A moderate amount	A lot	A great deal
Upset										
Angry										
Frustrated										
Disappointed										
Sad										
Fearful										
Guilty										
Ashamed										
Regretful										
Betrayed										
Confused										
Helpless										
Stressed										
Apathetic										
Worried										

Critical of the violator
A sense of injustice
Happy: content, untroubled
Optimistic: hopeful about the future

Confident: sure, certain
Safe: you could be vulnerable, take risks
Relieved: a sense that you didn't need to spend time worrying or checking up on them
Grateful: thankful the person was trustworthy
Again

Proud that the person was trustworthy Pleasantly surprised			

Appendix F

Measure of Basic Values in Life (Gouveia et al., 2014)

Instructions: Please carefully read the basic values and their descriptions listed below. Using the following answer scale, write a number beside each value to indicate how important you consider each value as a guiding principle in your life.

1	2	3	4	5	6	7
Completely Unimportant	**Not Important**	**Not Very Important**	**More or Less Important**	**Important**	**Very Important**	**Of the Utmost Importance**

1. **SEXUALITY.** To have sexual relationships; to obtain sexual pleasure.
2. **SUCCESS.** To reach your goals; to be efficient in everything you do.
   SOCIAL **SUPPORT.** To obtain help when you need it; to feel that you are not alone in the world.
3. **KNOWLEDGE.** To look for up to date news on not very well-known matters; to try to discover new things about the world.
4. **EMOTION.** To enjoy challenges or unknown situations; to look for adventure.
5. **POWER.** To have the power to influence others and to control decisions; to be the boss of a team.
6. **AFFECTIVITY.** To have a deep and enduring affectionate relationship; to have somebody to share successes and failures.
7. **RELIGIOSITY.** To believe in God as the savior of humanity; to complete the will of God.
8. **HEALTH.** To look after your health at all times, not just when sick; not to be sick.
9. **PLEASURE.** To live for the moment; to satisfy all your desires.
10. **PRESTIGE.** To know that a lot of people know and admire you; when you are older to receive a homage for your contributions.

11. **OBEDIENCE.** To fulfill your daily duties and obligations; to respect your parents, superiors or elders.
12. **PERSONAL STABILITY.** To have the certainty that tomorrow you will have all that you have today; to have an organized and planned life.
13. **BELONGING.** To have good neighbourly relationships; to form part of a group (e.g., social, religious, sporting, etc.)
14. **BEAUTY.** To be able to appreciate the best in art, music and literature; to go to museums or exhibitions where you can see beautiful things.
15. **TRADITION.** To follow the social norms of your country; to respect the traditions of your society.
16. **SURVIVAL.** To have water, food and shelter every day in your life; to live in a place with enough food.
17. **MATURITY.** To feel that your purpose in life has been fulfilled; to develop all your capacities.