

Running Head: TRUST AND SAFETY VOICE

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Promoting Safety Voice with Transformational Leadership: The Mediating role of Two
Dimensions of Trust

Abstract

Although transformational safety leadership is known to encourage employee safety voice behaviors, less is known about what makes this style of leadership effective. We tested two models that link transformational safety leadership to safety voice through various dimensions of trust. Data from 150 supervisor-employee dyads from a UK oil refinery first supported a model in which the effects of transformational safety leadership were mediated by affect-based trust, but not cognition-based trust. The data further supported an extended model in which the effects of transformational safety leadership were sequentially mediated by affect-based trust and disclosure trust intentions, but not reliance trust intentions. These findings suggest that leaders seeking to encourage safety voice behaviors should go beyond ‘good reason’ arguments and develop affective bonds with their employees.

Promoting Safety Voice with Transformational Leadership: The Mediating Role of Two Dimensions of Trust

Having employees voice their concerns about safety is important in high-risk industries because the act can encourage organizational learning and prevent accidents (Hofmann & Morgeson, 1999; Kath, Marks, & Ranney, 2010). In recognition of this, organizations are increasingly looking for ways to promote employee ‘safety voice’ and overcome barriers to participation such as fears of retaliation (Collinson, 1999; Jefcott, Pidgeon, Weyman, & Walls, 2006) and the normalization of violations (Ashford & Anand, 2003). Employee safety voice refers to behaviors that seek to constructively bring about change in safety practices, such as raising suggestions for change and reporting safety violations. One factor that has received significant attention as a promoter of safety voice is transformational safety leadership (e.g., Conchie & Donald, 2009; Hofmann, Morgeson, & Gerras, 2003). Characterized by actions that promote shared group values, a vision for the future, and individualized support to achieve goals, transformational leadership has been associated with open communication and information sharing (Zohar & Tenne-Gazit, 2008), engagement in safety citizenship behaviors (Conchie & Donald, 2009), and, critically, better rates of safety (Barling, Loughlin, & Kelloway, 2002; Mullen & Kelloway, 2009).

While the effectiveness of transformational safety leadership is evident, precisely how this style of leadership promotes safety voice behavior is only beginning to be understood. Podsakoff, MacKenzie, Moorman, and Fetter (1990) argue that acts associated with transformational leadership affect employees’ behaviors because they generate trust and prompt them to perform beyond their formal role obligations. From this perspective, trust is important because it reflects employees’ sense of confidence that their leader will not retaliate—retaliation

being a principal reason for employees not engaging in safety voice behaviors (Tucker, Chmiel, Turner, Stride, & Hershcovis, 2008). In support of their view, Podsakoff et al. (1990) showed that trust was a mediator of transformational leadership effects on employees' organizational citizenship behaviors. Others have since reinforced this view by finding direct and indirect mediation effects for trust across measures of transformational leadership and organizational citizenship and in-role performance (e.g., Jung & Avolio, 2000; Pillai, Schriesheim, & Williams, 1999). However, and critically, this research has conceptualized trust as a unitary construct. A growing body of research shows that trust is better conceptualized as having multiple dimensions, each of which may have a different relationship with leadership and behavioral outcome measures (e.g., Colquitt, Scott, & LePine, 2007; Dirks & Ferrin, 2002).

An elaborate conceptualization of trust opens up the question of whether different trust processes, or indeed multiple processes, underpin the relationship between transformational safety leadership and employee safety voice behavior. The answer to this question serves not only to enhance our theoretical understanding of the process that links transformational safety leadership and safety voice, but it also has applied value, since identifying the aspects of trust that influence employee safety behavior should allow organizations to refine their supervisory practices (Conchie, Donald, & Taylor, 2006). The purpose of this study was therefore to answer this question by proposing and testing two models of the mediating role of trust in the relationship between transformational safety leadership and safety voice behavior. We begin by exploring current conceptualizations of trust beliefs and by arguing, based on social-exchange theory, for the primacy of affect-based trust beliefs in influencing employee safety behavior. We then consider the impact of employee intentions, and present evidence to suggest that two forms of trust-related intentions may mediate the role of employees' affect-based trust beliefs. Using a

sample of oil refinery workers and their supervisors, we test our proposals by examining a model in which the effects of transformational safety leadership are sequentially mediated by affect-based trust and disclosure/reliance trust intentions. We conclude by discussing the implications of our findings for both conceptualizations of trust and organizational efforts to encourage safety voice behavior.

Affect-based Trust Beliefs as a Mediator of Transformational Safety Leadership

One popular conceptualization of trust within the literature focuses on a trustor's (e.g., employee's) beliefs about a trustee (e.g., supervisor), and distinguishes between cognition-based and affect-based forms of this trust (Costigan, Ilter, & Berman, 2007; de Cremer, van Dijke, & Bos, 2006; McAllister, 1995; Yang, Mossholder, & Peng, 2009). Cognition-based trust refers to beliefs about a trustee's competence or ability to carry out his or her obligations (Cook & Wall, 1980). In contrast, affect-based trust refers to a belief that the trustee will act unselfishly towards others and show care and concern for their welfare (Holmes & Rempel, 1989; McAllister, 1995). Of these two belief components, there are a number of reasons to expect that affect-based trust beliefs, rather than cognition-based trust beliefs, mediate the link between transformational safety leadership and safety voice behavior.

One reason stems from the fact that transformational leadership operates within a social exchange framework. Within this framework, leaders' actions build trust through individualized concern and respect for employees (Jung & Avolio, 2000), which generates a sense of obligation within employees to reciprocate. One way that employees satisfy this sense of obligation is by performing beyond formal role obligations to engage in discretionary behaviors that incur socio-emotional benefits for the leader. According to Dirks and Ferrin (2002), trust in these exchanges is focused at the relationship level where individuals make trust-related decisions based on the

quality of exchanges with their leader, rather than on their leader's competence. Consistent with this view, Burke, Sims, Lazzara, and Salas (2007) have shown that 'concern' and 'support' are components common to both affect-based trust beliefs and transformational leadership.

Similarly, others have shown a strong relationship between affect-based trust beliefs and ethical leadership (e.g., Brown, Treviño, & Harrison, 2005). Although ethical leadership is distinct from transformational leadership, managers with higher moral reasoning are also likely to display more transformational behaviors (Turner, Barling, Epitropaki, Butcher, & Milner, 2002).

A second reason to expect affect-based trust to be important comes from data suggesting that affect-based trust beliefs are a stronger promoter of work performance than cognition-based trust beliefs. Affect-based trust in management has been linked with employee commitment to organizational goals (Costigan, Ilter, & Berman, 1998), cooperation (Ng & Chua, 2006), organizational identification (de Cremer et al., 2006), helping (Yang et al., 2009), and enterprising behavior (e.g., speaking out and independent judgment; Costigan et al., 2007). In these studies, cognition-based trust beliefs had minimal to no effect (see also Lee, 2004). Similar to safety voice, these behaviors represent discretionary acts that are not required for the economic completion of work tasks, but which are a product of the kinds of socio-emotional exchanges that transformational leadership creates.

Trust Intentions as a Mediator of Affect-based Trust Beliefs

While trust beliefs capture aspects of an employee's perception of their supervisor's character, or relationship quality, a number of researchers have suggested that a complete view of trust must also consider a trustor's intentions in relation to the trustee (Mayer, Davis, & Schororman, 1995; McKnight, Cummings, & Chervany, 1998; Rousseau, Sitkin, Burt, & Camerer, 1998). In line with classic attitude-behavior theories (e.g., Fishbein & Ajzen, 1975),

these models position trust intentions as the route through which trust beliefs have their influence on behavior. Trust intentions refer to an individual's willingness to accept vulnerability by depending on another. Such intentions are the immediate antecedent of behaviors that are considered personally 'risky' and are assumed to mediate the effects of trust beliefs on behavior (Colquitt et al., 2007; Mayer et al., 1995; McKnight, Choudhury, & Kacmar, 2002). Because safety voice can result in negative consequence for an employee whose comments are viewed as criticism (Jefcott et al., 2006), it is arguably a good example of such 'risky' behavior, and is therefore potentially influenced by trust intentions.

When operationalizing trust intentions, researchers have tended to use items that address an individual's willingness to depend on another (e.g., 'I would be comfortable with my supervisor making key decisions that critically affect me'; Ferrin, Kim, Cooper, & Dirks, 2007; Mayer et al., 1995; McKnight et al., 2002). However, Gillespie (2003) has shown empirically that intentions have two distinct dimensions, namely, reliance and disclosure. Reliance intentions reflect an individual's willingness to depend on another, or rely on them in a situation that may result in harm. Disclosure intentions reflect an individual's willingness to disclose sensitive information to another, where such information may cause harm to the individual if used with negative intent. Gillespie demonstrated that these dimensions have different antecedents, such that reliance stems from beliefs about another's skills and judgment, and disclosure stems from beliefs about another's willingness to share feelings. The distinct emphases of these two forms of intention map directly onto the emphases of cognitive- and affect-based trust belief. Accordingly, in comparison to reliance intentions, disclosure intentions might be expected to have the stronger mediator role on the relationship between affect-based trust beliefs and safety voice behaviors.

Support for this proposal comes from McKnight et al. (2002). They argue that disclosure intentions have a stronger association with actual behavior than reliance intentions (which they label as trust intentions) because the latter are general and non-committal in comparison to the former, which are specific and include an element of risk. The risk that disclosure intentions share with actual behavior is, they argue, what causes the stronger relationship; an argument that is consistent with Ajzen's (1988) principle of compatibility. In support of their view, McKnight et al. demonstrated that trust beliefs had both direct and indirect effects on disclosure intentions. Moreover, in line with our arguments, they also found that disclosure intentions (the proposed immediate antecedent of behavior) were more strongly related to trust beliefs than to reliance intentions.

Current Study

As can be seen in Figure 1, our unpacking of the nature of trust makes clear two differential relationships that may exist for both trust beliefs and intentions. The first distinction relates to our prediction that affect-based trust beliefs, but not cognition-based trust beliefs, will be a significant mediator of the relationship between transformational safety leadership and safety voice behavior (Figure 1, top panel). The second distinction concerns our prediction that reliance trust intentions, but not disclosure trust intentions, will act as a mediator of the affect of affect-based trust on the relationship between transformational leadership and safety voice (Figure 1, bottom panel). The conceptualization of trust intentions as proceeding trust beliefs is consistent with Gillespie's (2003) point that beliefs alone do not lead to trust-driven behaviors as beliefs are devoid of risk, vulnerability and interdependence, which define trust and consequently shape behaviors. It is also consistent with McKnight et al.'s (2002) argument that a willingness

to be vulnerable (trust intentions) is proximally closer to trust-driven behaviors (e.g., safety voice), than beliefs about another's trustworthiness.

Methods

Participants and Procedure

Data were collected from 150 employees and their 29 immediate supervisors at a large oil refinery located in the UK. All surveyed employees and their supervisors were male, which is characteristic of the industry. The employees had an average age of 40 years (Range 23 – 60), an average tenure at the refinery of 8.4 years (SD = 6.9), and an average tenure within the industry of 10.3 years (SD = 7.8). The supervisors had an average tenure at the refinery of 8.5 years (SD = 26.6), and an average tenure within the industry of 20.4 years (SD = 5.9).¹ The supervisors had occupied their current role for an average of 5.6 years (SD = 4.7; Range 1 month – 18 years), and were directly responsible for an average of 8 employees (Range 1 – 16). The average length of supervisor-employee relationships was 2 years (SD = 1.8).

All participants were approached at their worksite by the first author and asked to participate in a study on behavioral safety. Employees were given a questionnaire that assessed their immediate supervisor's safety leadership behaviors, their own affect- and cognition- based trust beliefs in their supervisor, and their intentions to rely on their immediate supervisor and disclose safety information. Supervisors were given a questionnaire for each of the employees that they supervised, which assessed the frequency that the employee engaged in safety voice behaviors. All measures were made specific to safety in order to focus on this domain of leadership (Kelloway, Mullen, & Francis, 2006) and to ensure that the measures were at the same level of abstraction (see Zacharatos, Barling, & Iverson, 2005, for problems when using scales with different levels of specificity). Of those approached to participate in the survey, 163

employee responses and 196 supervisor responses were returned. Of the total returned questionnaires, 150 complete dyadic sets were identified (i.e., those with an employee response and a supervisor response relating to that employee), and these were used in the final analysis.

Measures

Transformational leadership. We measured supervisor's transformational safety leadership using Barling et al.'s (2002) scale. This scale required employees to rate the frequency with which their immediate supervisor engages in a range of behaviors, such as 'Encourages me to express my ideas and opinions about safety at work'. They made this rating on a 5-point scale that ranged from never (1) to always (5). Recently, Conchie and Donald (2009) reported that a shortened 8-item version of Barling et al.'s scale, which omits the transactional leadership element of contingent reward, performed better than the original 10-item scale. To ensure we examined components of transformational leadership and not transactional leadership, we used the shortened scale in our analysis. Our decision was supported by the results of a confirmatory factor analysis (CFA) that showed a better fit with an 8-item scale, $\chi^2_{20} = 46.41, p < .01$; CFI = .95; RMSEA = .09, than the 10-item scale, $\chi^2_{35} = 90.56, p < .001$; CFI = .92; RMSEA = .10; model difference, $\Delta\chi^2_{15} = 44.15, p < .001$.

Trust beliefs. We measured employees' trust beliefs using a 6-item scale that combined existing measures of affect- and cognition- based trust belief measures. Specifically, three items were taken from McAllister's (1995) affect-based trust scale. These items, which were modified to be specific to safety, require employees to report their level of trust on items such as 'My supervisor would respond caringly if I shared a *safety* problem with him'. The remaining three items were taken from Conchie and Donald's (2009) measure of cognition-based trust beliefs in supervisors. These items require employees to report their level of trust on items such as 'I trust

my supervisor's judgment when it comes to safety'. Responses to all trust belief items were made on a 5-point scale that ranged from strongly disagree (1) to strongly agree (5).

Trust intentions. We measured employees' trust intentions using a 10-item scale that combined existing measures of reliance and disclosure intentions. Specifically, five items from Ferrin et al.'s (2007) extended version of Mayer et al.'s (1995) scale were used to measure reliance (trust) intentions.² These items require employees to report their trust intentions to items such as 'I would be comfortable having my immediate supervisor work on a safety critical task even if the company could not monitor his actions'. We measured employees' disclosure intentions using five items from Gillespie's (2003) scale that were made specific to safety. These items required employees to report their disclosure intentions to items such as 'I would be willing to discuss safety-related problems that could potentially be used against me'. Responses to all intention items were made on a 7-point scale that ranged from very strongly disagree (1) to very strongly agree (7).³

Safety voice behavior. We assessed employees' safety voice behaviors using 13 items taken from Hofmann et al. (2003). Example items are 'Express opinions on safety matters, even if others disagree' and 'Make safety-related recommendations about work activities.' Responses were made on a 5-point scale that ranged from never (1) to always (5).

Results

Validity of Measures

The discriminant validity of the measures was tested using CFA with maximum likelihood estimation. The results of a six factor model in which all variables were separated (i.e., leadership, affect-based trust beliefs, cognition-based trust beliefs, reliance intentions, disclosure intentions, and safety voice behaviors) showed a relatively good fit to the data, $\chi^2_{614} =$

1068.41, $p < .001$; CFI = .86; RMSEA = .07. Moreover, the six factor model provided a better fit than both a four factor model in which trust beliefs and trust intentions were treated as unitary constructs (i.e., leadership, trust beliefs, trust intentions, and safety voice), $\chi^2_{623} = 1331.11$, $p < .001$; CFI = .79; RMSEA = .09, and a three factor model in which trust was treated as a unitary construct (i.e., leadership, trust and safety voice), $\chi^2_{626} = 1435.00$, $p < .001$; CFI = .76; RMSEA = .09. Estimates of internal consistency for each variable are shown in Table 1.

Model testing

The data were multilevel in nature as multiple employees evaluated their trust towards a single supervisor and their supervisor's leadership behaviors. Given this, we estimated intraclass correlation coefficients (ICC) to check for significant between-supervisor variance in each variable. These correlations revealed no significant between-supervisor differences for affect-based trust beliefs (ICC = .07, $p = .08$), cognition-based trust beliefs (ICC = .06, $p = .11$), reliance trust intentions (ICC = .07, $p = .11$), and disclosure trust intentions (ICC = .06, $p = .10$). However, they did show significant between-supervisor differences for transformational safety leadership (ICC = .24, $p < .001$) and safety voice behaviors (ICC = .50, $p < .001$). As such, we used the random coefficient regression procedure within HLM (Raudenbush & Bryk, 2002) to partial out, and thus control for, any between-supervisor differences in the transformational leadership and safety voice behavior variables. Briefly, this approach removed the systematic between-supervisor differences from the individual-level observed means on both measures. The result was an empirical Bayes residual estimate for each individual-level mean, which we used in place of the original value when testing the models. For the other variables (e.g., trust beliefs and trust intentions), we used the original values, as is appropriate given their non-significant ICCs.

The means, standard deviations, and correlations among the uncontrolled trust variables, and the controlled leadership and safety voice behavior variables, are shown in Table 1.

Table 1 shows that the relationship between affect-based trust beliefs and cognition-based trust beliefs is large ($r = .75$), suggesting that they might represent a single construct. We retained affect- and cognition- based trust beliefs as separate constructs because of the CFA results above, and for two further reasons. First, a comparison of a two factor model with a single factor model in which affect- and cognition-based trust beliefs were combined showed a superior fit for a two-factor model, $\chi^2_8 = 13.77, p = .09$; CFI = .99; RMSEA = .07 (one-factor model: $\chi^2_9 = 22.41, p < .01$; CFI = .97; RMSEA = .10). Second, as can be seen in Table 1, the two types of trust belief have different patterns of relationships with the other study variables, suggesting an underlying conceptual difference between the two (Guttman, 1977).

A single variable, rather than individual items, was used to operationalize each of the six primary variables in the study (see Figure 1). Our rationale for adopting this approach follows that described by Tetrick, Shore, Newton-McClurg, and Vandenberg (2007), and is two-fold. First, with 37 items and 150 supervisor-employee response pairs, the ratio of items to responses was such that deriving estimates for the necessary models without encountering convergence problems was unlikely. Second, testing sequential mediation with individual items, while simultaneously controlling for between-supervisor differences, would have required a complex multilevel structural equation model. The number of response sets available would have been insufficient to estimate all of the required parameters, and doing so would be an inefficient use of data, since evidence from our ICC analysis suggested that not all items were associated with significant between-supervisor variance.

To create a latent variable from each of the observed values, we used the procedure outlined in Tetrick et al. (2007). Specifically, we fixed the path from the latent variable to the observed variable as the square root of the composite reliability index for that observed variable, and we fixed the path from the error term to the observed variable as: $(1 - \text{reliability}) \times \text{the variance of the observed variable}$ (Williams & Hazer, 1986). To derive the composite reliability index for the leadership and safety voice variables, we used the multilevel CFA procedure in *Mplus* to create an individual-level measurement model for each variable that controlled for between-supervisor differences on the items. We then used the resulting within-group factor loadings to compute the composite reliability index for the two variables. As suggested by Tetrick et al., estimating the composite reliability index from the measurement model after controlling for between-supervisor differences “should be a reasonable approximation of the unreliability of the empirical Bayes estimates” (p.823). The composite reliability index for the four trust variables was created in the same way, but because of the non-significant between-supervisor variance differences, we used standard CFA (i.e., not multilevel) to create the measurement models.

We also used *Mplus* to test the two hypothesized models presented in Figure 1. Table 2 presents the estimated explained variance and pathway estimates for Model 1, which predicted affect-based trust, but not cognition-based trust, mediates the relationship between transformational safety leadership and safety voice behavior. The results of a model in which affect-based trust and cognition-based trust are both included and allowed to co-vary shows a non-significant pathway from cognition-based trust to safety voice behaviors, but a significant pathway from affect-based trust to these behaviors. This supports the first part of our prediction

that transformational safety leadership impacts safety voice behaviors through affect-based trust beliefs and not cognition-based trust beliefs.

Table 3 presents the estimated explained variance and pathway estimates for Model 2 (see Figure 1). As predicted, disclosure trust intentions significantly mediate the effects of affect-based trust on the transformational leadership-safety voice pathway, $\chi^2_3 = 4.08, p = .25$; CFI = .99; RMSEA = .05. In contrast, a relatively poor fit was found for a model in which reliance trust intentions mediate the effects of affect-based trust on the transformational leadership-safety voice pathway, $\chi^2_3 = 7.40, p = .06$; CFI = .94; RMSEA = .10. Moreover, as can be seen in Table 3, the structural pathway between reliance trust intentions and safety voice behaviors is non-significant, while all structural pathways are significant for the model that includes disclosure intentions. Finally, we tested a model in which both types of trust intentions (disclosure and reliance) were included in the Model and were allowed to co-vary. The results of this Model showed that the pathway between disclosure trust intentions and safety voice behavior was significant ($r = .18, p = .04$), while the pathway from reliance trust intentions and safety voice behavior was non-significant ($r = .04, p = .35$).

Discussion

Although high-risk organizations know that safety voice behaviors can lead to improved safety performance, it is less clear how they should promote such behavior. It has been suggested that one way to increase these behaviors is through management support for safety (Hofmann et al., 2003; Tucker et al., 2008). The findings of our study are consistent with this view, showing that supportive management in the form of transformational safety leadership increased safety voice behaviors amongst a sample of petrochemical employees. More important, however, we predicted and found that the influence of transformational safety leadership was mediated by

affect-based trust beliefs but not cognition-based trust beliefs. This suggests that organizations wishing to promote safety voice behavior will likely benefit from supervisors who recognize the importance of building relationships and making their concern for safety visible. Of less importance, the finding suggests, is their efforts to ensure that employees perceive them as competent.

This result extends models of leadership that have trust as a mediator of leader effects (e.g., Pillai et al., 1999; Podsakoff et al., 1990; Zacharatos et al., 2005) because it identifies affect-based trust beliefs as the specific dimension that occupies this mediator role. This instantiates recent arguments about the need to go beyond competence-level conceptualizations of good safety management (e.g., Yule, Flin, Paterson-Brown, Maran, & Rowley, 2006). It also adds to a broader set of recent findings that suggest leader-member exchanges play a critical role in shaping employees' affective responses to their organization (e.g., Chen, Sharma, Edinger, Shapiro, & Farh, in press; Eisenberger et al., 2010). So why are affective dynamics so important to organizational success? The reason safety voice behaviors are influenced by affect-based trust is likely to relate to the sense of psychological safety that it promotes. Studies have shown that feelings of psychological safety increase with management support and care (Kahn, 1992), which due to their share basis may also be likely with affect-based trust. When a person experiences a sense of psychological safety, they are more likely to engage in voice behaviors because they believe that these behaviors will be appreciated and supported (Edmondson, 1999). However, cognition-based trust is somewhat devoid of this reassurance as it focuses on economic exchanges in which pre-agreed behaviors (e.g., compliance with safety) are rewarded, and those that fall outside of this remit are unrecognized (Blau, 1964).

A number of studies have shown that, in addition to trust beliefs, employee behaviors are influenced by their trust intentions (e.g., Mayer et al., 1995; Mayer & Davis, 1999). Again, by considering multiple aspects of trust intentions, we were able to demonstrate that it is intentions relating to a willing to disclose sensitive information that is a critical route through which affect-based trust beliefs influence safety voice behavior. Although our results might seem to contrast early models of trust that put reliance trust intentions as the immediate antecedent of workplace behaviors (Mayer et al., 1995), they are consistent with more recent findings (McKnight et al., 2002) and the suggestion that affect-based trust precedes disclosure intentions (Gillespie, 2003). They also offers some support for Zand's (1972) model of trust, which proposes that trust in others is indicated, in part, by behavior that relates to information sharing, such as disclosing accurate and relevant information and fully sharing thoughts and feelings.

Collectively these results underscore the importance of exploring the multidimensional nature of constructs such as trust. This kind of conceptualization is routine in other areas of organizational and occupational psychology, such as personality and intelligence testing (e.g., O'Boyle et al., 2010; Paunonen, Rothstein, & Jackson, 1999), and arguably has much to offer our understanding of why particular interventions work at improving safety performance. Single dimension conceptualizations of trust may underestimate the importance of trust, especially if their method of measurement is heavily weighted towards one dimension of trust (e.g., cognition) over another. It is also the case that studies choosing to focus on either trust beliefs, or trust intentions, may fail to account for situations in which beliefs operate fully through intentions and those situations in which they influence other processes to have their effect. If management are to achieve safer behaviors from employees, then it is important that we understand precisely what underpins leader-focused strategies, and other strategies, that appear

to promote safe behavior. Only then can we identify what it is that needs to be done in an efficient way.

The insights of the study must be considered alongside its limitations. Because of operational constraints, we used subjective reports of employees' safety voice behaviors rather than objective information or observation data. These subjective reports have the potential to introduce bias into our analysis because they allow for under-reporting among those whom may regard voice as reflecting a lack personal integration into the organization, or conversely, over-reporting among those whom may regard voice as a 'desirable' behavior. However, our use of leader' reports rather than self-reports mitigated this problem to some extent. It also had the advantage of reducing common variance, and potential for inflated correlations, between safety voice and the leadership and trust variables. Moreover, because each supervisor reported on more than one employee, we were able to remove individual differences in rating and focus our analysis on relative judgments of performance.

A second limitation relates to the scope of behaviors considered in our model. Safety behaviors reflect more than safety voice, and include acts of affiliation, such as helping others, and role-defined compliance with safety procedures. While recent research suggests that transformational leadership is not important for promoting role-compliance safety behaviors (Innes, Turner, Barling, & Stride, 2010), evidence suggests that it is important for promoting affiliative behaviors (Conchie & Donald, 2009). An unanswered question, therefore, is what type of trust beliefs and intentions are important in promoting these effects? Research addressing this issue may also consider the role of trust in other agents within organizations, such as co-workers, as these have been shown to promote the effects of support from more senior figures on

employees' behaviors (Tucker et al, 2008) and to be powerful drivers of behaviors in their own regard (Turner, Chmiel, Hershcovis, & Walls, 2010).

The results of our study suggest that organizations seeking to promote safety voice behaviors should identify ways to improve employees' affect-based trust beliefs in their leader, which in turn, will impact their disclosure intentions. Our finding that cognition-based trust beliefs do not predict employees' safety voice behaviors suggests that beliefs about a leader's competence and judgment are not what drives the impact of transformational leadership in these situations. Rather, it is the fact that transformational safety leadership engages at the relationship level and creates exchanges that are defined by concern and other socio-emotional benefits.

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Footnotes

¹Three supervisors did not report demographic information.

²Dirks et al.'s scale comprises 6-items. We omitted one item ('I would keep an eye on my supervisor') because of its poor reliability within a high-risk context (e.g., Conchie & Burns, 2008).

³We used different scale measures with this set of items compared to other items as research has shown that this is effective for reducing method effects (Podsakoff et al., 2003).

Figure Caption

Figure 1. Schematic representation of two models linking transformational safety leadership to employees' safety voice behaviors through trust beliefs and intentions.

Table 1.

Reliability, means, standard deviations and correlations between study variables

Variable	<i>M</i>	<i>SD</i>	α	1	2	3	4	5
1. Transformational Safety Leadership	3.87	0.61	.89					
2. Affect-based Trust Beliefs	4.04	0.54	.82	.57**				
3. Cognition-based Trust Beliefs	4.32	0.50	.84	.59**	.75**			
4. Reliance (trust) Intentions	4.72 ^a	1.06	.82	.24**	.38**	.48**		
5. Disclosure (trust) Intentions	5.27 ^a	1.26	.86	.51**	.69**	.58**	.35**	
6. Safety Voice Behaviors	3.68	0.68	.93	.06	.24**	.17*	.10	.20*

Note. Correlations are based on individual level data; Transformational safety leadership and safety voice behaviors are represented as empirical Bayes estimates; ^ameasured on a 7-point scale;

* $p < .05$; ** $p < .01$

Table 2
Structural pathway estimates for Model 1

Endogenous variables	R^2	Affect-based Trust Beliefs	Cognition-based Trust Beliefs	Safety voice Behaviors
<i>Proposed Model</i>				
Transformational safety leadership	.43	.66**		
Transformational safety leadership	.48		.69**	
Affect-based trust beliefs ^a	.12			.74*
Cognition-based trust beliefs ^a	.12			-.53

Note.

Parameter estimates are standardized coefficients. ^a R^2 for affect- and cognition- based trust reflects combined variance explained in safety voice behaviors by the two belief variables

* $p < .05$; ** $p < .01$

Table 3

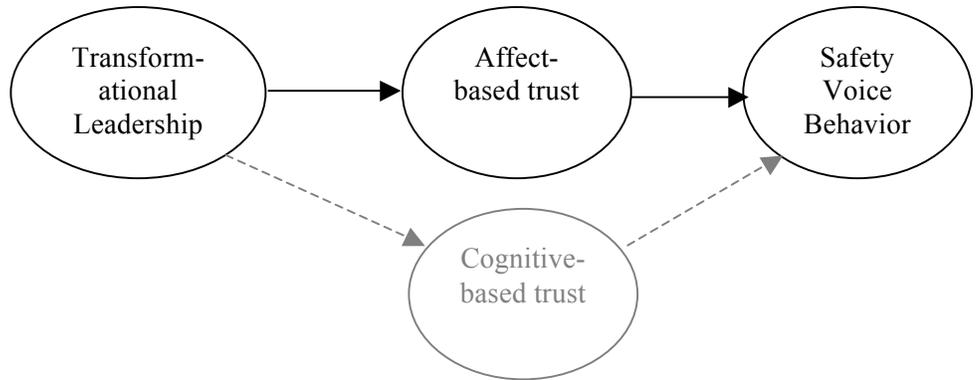
Endogenous variables	R ²	Affect-based Trust Beliefs	Disclosure Intentions	Reliance Intentions	Safety voice Behaviors
<i>Proposed Model</i>					
Transformational safety leadership	.46	.68**			
Affect-based trust beliefs	.66		.81**		
Disclosure (trust) intentions	.05				.23**
<i>Alternate Model^a</i>					
Transformational safety leadership	.44	.67**			
Affect-based trust beliefs	.21			.45**	
Reliance (trust) intentions	.02				.13
Structural pathway estimates for Model 2					

Note.

Parameter estimates are standardized coefficients. ^a Model based on N=135 to control for missing data

** p < .01

Model 1: Model of affect-based trust beliefs



Model 2: Model of affect-based trust and disclosure (trust) intentions

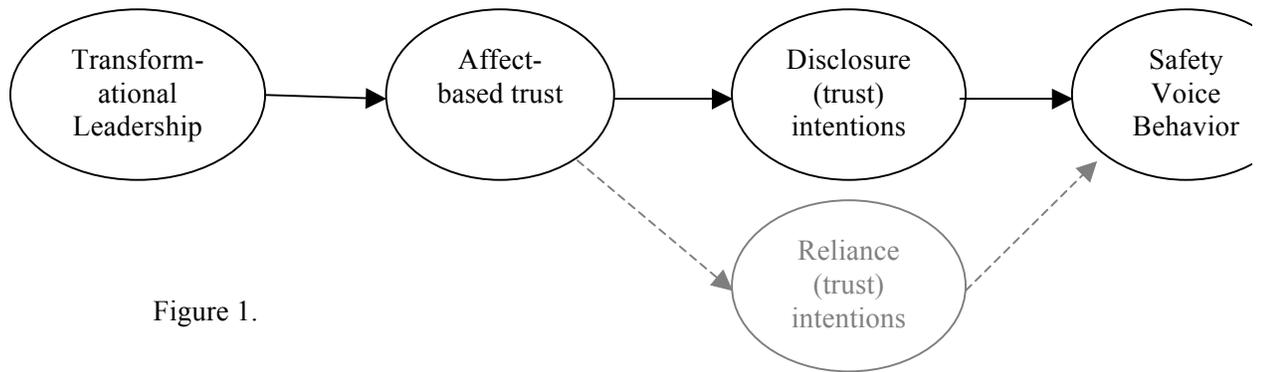


Figure 1.