

# **The Role of Trust in Safety Management**

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## **Abstract**

Trust has been of great interest in organisational research and it is starting to emerge as an important topic in safety management. This paper provides a brief introduction to the concept of trust and considers the role of trust in managing safety in high hazard organisations. A case is made for why trust is important in the aviation industry and some of the evidence linking trust to safety outcomes and worker behaviours is reviewed. Recommendations for how to build trust within an organisational setting are made by focusing on three factors of perceived trustworthiness: ability, benevolence and integrity.

## **Introduction**

*Three things are needed for government: weapons, food and trust. If a ruler can't hold on to all three, he should give up the weapons first and the food next. Trust should be guarded to the end: without trust we cannot stand* (Confucius cited in O'Neill, 2002, p. 1).

The view of trust as a foundation for social order spans many intellectual disciplines. Understanding why people trust, as well as how trust shapes social relations has been a central focus for psychologists (Worchel, 1979), organisational scientists (Kramer and Tyler, 1996), sociologists (Gambetta, 1988), political scientists (Barber, 1983), and economists (Axelrod, 1984). Although the concept of trust appears in a variety of senses in the social sciences there is considerable debate about how to define and measure trust and how trust affects the behaviour of people in the workplace. This paper provides a brief introduction to the topic of trust and considers the role of trust in managing safety in high hazard industries, specifically, the aviation industry.

## **The need for trust in high hazard organisations**

In today's flatter organisations, jobs often require cooperation across boundaries, such as functional areas, divisions, and management versus workforce lines. Because trust facilitates cooperative behaviour (Gambetta, 1988), promotes adaptive organisational forms like network relations (Miles and Snow, 1992) and facilitates rapid formulation of ad hoc work groups (Meyerson, Weick, and Kramer, 1996), it is invaluable to organisations like those in the aviation industry that depend on cross-functional teams, interorganisational partnerships, and temporary workgroups to coordinate work (e.g. Creed and Miles, 1996; Powell, 1990; Ring and Van de Ven, 1994). A lack of trust can affect employee's commitment to organisational goals (Handy, 1995; McAllister, 1995) and this may include safety. It is now widely recognised that an organisation's safety culture affects safety performance through safety management practices and worker safety behaviours and leading models of safety culture (Hudson, 2003; Reason, 1997; Westrum, 1995) have proposed that trust plays a central role. For example, Reason (1997) proposed that an informed culture is for all intents and purposes a safety culture, and that in order to move towards increasing informedness, the workforce must report their errors and near misses. However, in order for the workforce to do so, they must trust the management to treat them fairly. Thus, in order to influence performance, managers in high hazard industries need to develop and cultivate a culture of safety within their organisations. One way they can do this is by building trust between employees, supervisors, and managers. With respect to the aviation industry, Helmreich and Merritt (1998) have stated that 'safety cultures are built on trust' (p. 175). In aviation, trust needs to be built at several different levels:

- Within and between workers (e.g. Flight deck/Cabin crew/ATC/Engineering).

- In supervisors.
- In senior managers.
- In the organization (e.g. Airline, Airport Authority).
- In the industry regulator.
- In technology (e.g. TCAS vs. ATC as in the Ueberlingen accident July 2002; See Bennett, 2004).

However, before recommendations about how to build trust in an organisational setting can be made, it is prudent to consider how trust has been defined and measured in the organisational literature and some of the evidence linking trust to safety performance and worker safety behaviours.

### **Defining and measuring trust**

As mentioned, trust has been studied by a variety of researchers in the social sciences. Sometimes, these researchers have used the term 'trust' when they mean other things and this has led to confusion about the definition and utility of trust. For example, Deutsch (1958) conceptualised trust as a choice-behaviour. He defined high trust behaviour as cooperation and low trust behaviour as competition. Rousseau, Sitkin, Burt and Camerer (1998) argued that this has led to a blurring of the distinction between trust and the behavioural manifestation of trust because cooperation may result from a variety of reasons unrelated to trust, such as coercion (e.g. court-ordered compliance). Mayer, Davis and Schoorman (1995) have proposed an influential definition of trust. They defined trust as 'the willing-ness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party' (p.712). Most trust researchers would now agree that trust involves a willingness to accept vulnerability. Rousseau et al. (1998) conducted a cross-disciplinary review of definitions of trust and proposed the following widely accepted definition: 'Trust is a psychological state comprising the intention to accept vulnerability based upon positive expectations or behaviour of another' (p. 395). Accordingly, this paper shall adopt the above definition to consider the role of trust in safety management. In order to distinguish between trust, its antecedents, and outcomes, Mayer et al. (1995) proposed an integrative model of organisational trust that considers the trusting party, the party to be trusted and the perceived risk in the situation. They proposed that an individual's propensity to trust and the perceived trustworthiness of a given trustee (based on perceptions of ability, benevolence and integrity) may lead to trust (i.e. a willingness to be vulnerable). The authors proposed that individuals compare the level of trust and the level of perceived risk in a situation (belief about likelihoods of gains or losses outside of considerations that involve the relationship with the particular trustee). If trust is greater than perceived risk, an individual will engage in risk taking in relationship, which is the behavioural manifestation of trust. If perceived risk is greater than trust, an individual will not engage in trusting behaviour. In other words, engaging in trusting behaviour involves a social judgement that results in taking a risk, whereas there is no risk taken in the willingness to be vulnerable (i.e. to trust).

Applying Mayer et al.'s (1995) model to safety behaviours, trust between two employees may lead one of the employees to stop the job or challenge the other's potentially unsafe act or rule violation. In this example, stopping the job/ challenging a workmate's potentially unsafe act is trusting behaviour. The employee who stops the job is taking a risk that his workmate will respond positively to his safety concerns and not brand him a troublemaker or worse. But, according to Mayer et al.'s (1995) model, the decision to engage in trusting behaviour (i.e. stop the job/challenge a workmate) is also dependent on the perceived situational risk (factors independent of the relationship with that workmate). In this example, the perceived risk in the situation would most likely be management's response to stopping the job for safety reasons. So, this model predicts that even if an employee trusts his workmate, he will not stop the job/ challenge his workmate if the employee perceives there to be a

greater risk of an adverse response from management about a missed deadline because of safety concerns. Thus, in order for the employee to stop the job/challenge his workmate, he must trust both his workmate and the management's commitment to safety. This example shows quite poignantly that in order to cultivate a culture of safety, trust must exist in different levels of the organisation. It is not in itself sufficient for members of the workforce to trust each other and not trust the management, or even for members of the workforce to trust the management but not each other to foster positive safety behaviours. Trust, then is a separate construct from its antecedents (i.e. perceived trustworthiness) and outcomes (i.e. trusting behaviour - risk taking in relationship). Because trust is a psychological state, it cannot be measured directly. Trust, as it has been defined here, is best measured indirectly by questionnaire items that assess an individual's willingness to be vulnerable to another party for a given set of circumstances (e.g. I would be willing to let top management have complete control over my future in this company - Mayer and Davis, 1999). However, most researchers have used questionnaire items that take a more direct approach (e.g. I trust my supervisor to act on safety concerns Burns, 2004; Management can be trusted to make sensible decisions for the firm's future - Cook and Wall, 1980).

### **Trust, safety behaviours and organisational performance**

Although trust is central to theoretical models of safety culture, research on the effects of trust on safety performance is only starting to emerge (Burns, 2004; Zacharatos, Barling, and Iverson, in press). In their study of high performance work systems (a group of separate but related human resource practices that recruit, select, develop, motivate, and retain employees), Zacharatos et al. (in press) cited some studies of high-performance work systems that resulted in trust in management (Cascio, 1993; Fitz-Enz, 1997). They also noted that trust in management mediates the relationship between transformational leadership and follower performance (Lung and Avolio, 2000) then proposed that employees who are trusting of management may be more inclined to work in a safe manner, to look out for the safety of fellow employees and to take greater initiative in safety-related matters. The authors proceeded to test the hypothesis that trust in management mediates the relationship between a high-performance work system and safety incidents (incidents requiring first-aid, or near misses), and personal safety orientation (compliance, initiative, knowledge, motivation). They found that trust in management mediates the effects of the high-performance work system on safety incidents but not on personal safety orientation. The authors concluded that future research should focus on whether safety-specific trust in management serves a more substantial mediating role on worker safety attitudes and behaviours. This is a sensible next step as trust is context-specific (i.e. an individual might trust someone in one situation but not in another - Mayer et al., 1995; Zand, 1972).

Burns (2004) examined the relationship between safety-specific attitudes about trust and self-report safety behaviours. In a study of UK oil and gas workers, he found a positive relationship between an individual's safety-specific trust in a workmate (and supervisor) and whether that individual would challenge that workmate's (and supervisor's) unsafe act or rule violation. He also found a positive relationship between an individual's safety-specific trust in a supervisor and whether that individual would report an incident or safety concern that had to do with the supervisor. This relationship was not observed for safety-specific trust in workmates. Further research needs to examine the relationship between safety-specific trust and safety outcomes like worker injuries and near misses but Burns' work has started to provide empirical support for models of safety culture which are based on trust (e.g. Reason, 1997). Studies of safety climate (workers' attitudes and perceptions about safety) give a range of leading indicators about the organisation's underlying safety culture, which can be used to identify potential safety problems before they are realised as accidents and near misses. Despite the central role of trust in leading models of safety culture, literature reviews of the factors measured in safety climate surveys (Flin, Mearns, Q'Connor, and Bryden, 2000; Guldenmund, 2000) have shown that trust is rarely measured. When questionnaire items about trust

are included in safety climate surveys, it is usually just as one or two items, rather than as a complete scale. Future studies of safety climate in high hazard industries should consider measuring trust in order to assess its effects on safety performance. Where data have been collected about trust in high-hazard industries, they suggest that trust is not particularly pervasive. In an investigation of the human and organisational factors in offshore safety, Mearns, Whitaker, Flin, Gordon and Q'Connor (2000) found that 36% of a sample of 789 respondents from 13 different UK offshore installations did not trust their offshore installation managers. Moreover, 30% of the sample indicated that they did not trust their supervisors while nearly half of the sample did not trust their workmates to complete tasks safely and competently. Together, these figures indicate that more than one third of the respondents showed a lack of trust in their work colleagues on offshore installations. Mearns et al. (2000) also found that 35% of respondents disagreed or were ambivalent about the statement 'People are willing to report near misses'. Similarly, 30% of respondents disagreed or were ambivalent about the statement 'People are willing to report accidents.' Certainly, these findings are not very consistent with the requirements for engineering an effective safety culture (Reason, 1997), making the need to study trust ever more salient.

A more established area of trust research is on the effect of teamworking. Dirks (1999) investigated whether the level of trust in a group affects group performance and how this relationship might operate. He noted that most trust research appears to position trust as a variable that has direct effects on work group processes and performance (i.e. when trust is increased, a group is expected to experience better group processes like cooperation, and better performance; when trust is decreased a group is expected to experience poorer group processes, and poorer performance). Using an experimental method, he found support for a moderating role of trust on group performance. In other words, trust seemed to influence how motivation is converted into work group processes and performance rather than influencing these outcomes directly. These findings have implications for teams in high-hazard industries like surgical teams and cockpit crews.

With respect to surgery, Fletcher et al. (2003) assessed anaesthetists' non-technical skills, which included making judgements about the competence of other team members. As per Mayer et al.'s (1995) model, perceptions of ability contribute to perceived trustworthiness and can lead to trust. In large teaching hospitals with multiple operating theatres, team members for a given operation (anaesthetists, surgeons, and nurses) may have little or no previous experience of working together. The judgement of competence that an anaesthetist makes of an unfamiliar surgeon or anaesthetic trainee will determine the level of trust the anaesthetist will place in that individual. This may in turn, influence the anaesthetist's risk-taking in relationship with that individual, in terms of monitoring the individual's performance and accepting the individual's decisions during the operation. Judging competency and trust is also important in aviation. For example, pilots and air traffic controllers make judgements of the other's competence using minimal communication information, such as tone of voice, speed to respond, and clarity of instruction. Sanne (2001) studied trust between air traffic controllers and pilots by analysing their radio communications. He found that what might appear to be redundant phrases such as 'due to traffic' in a climb instruction or 'thanks for co-operation' are in fact providing the necessary basis for trust and co-operation in both present and future interactions. Trust is starting to be linked to safety outcomes and worker behaviours in high hazard industries like oil and gas, medicine and aviation. Further research needs to be conducted to validate more fully, models of safety culture based on trust. However, alongside this research, considered attention must also be paid to how trust is built in organisational settings in order that organisations can start reaping the performance benefits that have been associated with higher levels of trust.

### **Building trust in organisations**

Many authors have argued that trust is fragile. With respect to reporting incidents in the aviation industry, O'Leary and Chappell (1996) stated 'Trust is the most important foundation of a successful reporting programme, and it must be actively protected, even after many years of successful

operation. A single case of a reporter being disciplined as the result of a report could undermine trust and stop the flow of useful reports' (p. 11). One way to build trust within and between organisations is to take account of the factors of perceived trustworthiness that lead to trust, as per Mayer et al.'s (1995) model. As mentioned, Mayer et al. (1995) proposed that trust is determined by a trustor's propensity to trust and perceptions of the trustworthiness of a given trustee. While every individual has a different propensity to trust, determined by personality and past trusting experiences, managers can manipulate perceptions of trustworthiness so as to build trust in their organisations. Mayer et al. (1995) identified three factors of perceived trustworthiness - ability, benevolence and integrity, which they defined as follows:

- *Ability* - 'that group of skills, competencies, and characteristics that enable a party to have influence within some specific domain' (p. 717). ..

- *Benevolence* - 'the extent to which a trustee is believed to want to do good to the trustor, aside from an egocentric profit motive' (p. 718).

- *Integrity* - 'the trustor's perception that the trustee adheres to a set of principles that the trustor finds acceptable' (p. 719).

Davis, Schoorman, Mayer and Tan (2000) used Mayer et al.'s (1995) model to investigate employees' trust for general managers of nine chain restaurants. The authors found that ability, benevolence, and integrity explained a major portion of the variance in trust. A confirmatory factor analysis revealed that the three-factor model fitted the data well and produced a better fit than a single-factor model. Mayer and Davis (1999) reported a similar factor structure for employees' trust in the senior management of a plastics manufacturing firm. These results suggest that ability, benevolence, and integrity are distinct factors of trustworthiness, which provide a solid framework from which to build trust. In terms of safety-specific trust, Burns (2004) used Mayer et al.'s (1995) three-factor model to investigate the antecedents of trust for workmates and supervisors, with respect to safety, at two UK gas plants. These studies found strong positive relationships between measures of trust and perceptions of ability, benevolence and integrity, with respect to safety, for both workmates and supervisors. Moreover, regression analyses using safety-specific items about perceived ability, benevolence and integrity as predictors of safety-specific trust explained much of the variance in trust for workmates and supervisors. However, there were insufficient sample sizes to factor analyse the data, which would have determined whether ability, benevolence and integrity are distinct factors of trustworthiness, with respect to safety. Thus, further research is needed so that a factor structure for trustworthiness, with respect to safety, can be confirmed.

Burns (2004) also proposed that in an organisation with a fixed hierarchical structure, group membership in different levels of the hierarchy was an antecedent of trust. The results from the studies at the two gas plants were consistent with predictions from theories of social categorisation (Tajfel and Turner, 1986) and self-categorisation (Turner, 1987) in that employees trusted their workmates more than their supervisors and senior managers, and trusted their supervisors more than senior managers. According to these theories, employees trusted their workmates more than supervisors and senior managers because they attributed more positive perceptions of trustworthiness to individuals who they classified as part of the same social group (i.e. the other members of the workforce). Similarly, employees trusted their supervisors more than senior managers because they attributed more positive perceptions of trustworthiness to their supervisors, who they classified as part of their work team or department. However, due to the lack of a confirmed factor structure for trustworthiness with respect to safety, it was not possible to identify which of the proposed factors led to the differences in trust for workmates, supervisors, and senior managers. What these findings do suggest though, is that in an organisation with a fixed hierarchical structure, the effect of group membership on trust is an artefact of how the organisation is hierarchically structured. In these types of organisations, a flatter organisational structure may broaden perceptions of similar group membership and increase the perceived trustworthiness of individuals. This might be achieved by incorporating team leaders into the workforce instead of a structure in which supervisors are a level of middle management. Doing so may result in senior managers being perceived as closer to the

workforce and may afford them greater opportunities to demonstrate their ability, benevolence and integrity. Certainly, these findings have implications for organisations operating in high hazard industries like aviation and medicine.

## **Conclusion**

Many authors agree that trust is the foundation of an effective safety culture. Managers in high hazard industries, like aviation, can develop and cultivate a culture of safety within their organisations by building trust between employees, supervisors, and managers. By acting in ways to enhance perceptions of their ability, benevolence, and integrity, supervisors and managers in the aviation industry can increase their subordinates' perceptions of their trustworthiness. This should lead to subordinates having more positive attitudes about trust for their supervisors and managers. In turn, this could lead to the workforce exhibiting more positive safety behaviours, like reporting near misses and challenging unsafe acts, resulting in fewer occupational injuries and better organisational safety performance.