

# Defining Safety Communication in the Workplace: An Observational Study

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# Executive Summary

## Key messages

This study is the first to objectively monitor communication within the daily working lives of leaders in the workplace (ie., workgroup supervisors) and identify types of communication that support and/or facilitate a safe working environment. The findings of this study not only extend theory in the area of workplace safety, but it offers recommendations for the development of targeted countermeasures to improve safety climate and safe working practices.

## Summary of findings

Six workgroup supervisors from a laboratory-based organisation were recruited to participate in the study. The aims of the research were to (i) categorise communication in the workplace into three categories, namely production-related communication, value-related safety communication and compliance-related safety communication and (ii) explore the trade-off between production and safety, using communication as the exemplar. The results found examples of task-related (productivity, efficiency, workflow and human resources) communication, as well as value-related (greetings, personal life discussions, workplace relations) and compliance-related safety communication. We also found that the majority of the communication recorded was task-related communication compared with value-related and compliance-related safety communication. Future research is needed to examine the relationship between type of communication and objective outcomes, such as safety performance and injury.

## Recommendations for action

The results of this study offer recommendations to improve communication in the workplace. Recommendations focus on countermeasures designed to (i) develop the interpersonal skills of supervisors in conveying value-based safety communication and (ii) increase the frequency of safety-related communication within supervisor-worker interactions. The intent of these recommendations are to target the referent of safety climate perceptions through improving worker perceptions of the value and priority given to safe working practices. The findings of this study also establish the foundation for future research to objectively explore the trade-off between production and safety through quantitatively exploring the relationship between this trade-off and outcomes, such as safe working behaviour and injury and death in the workplace.

## Conclusions

This study presents a novel approach to exploring communication in the workplace. Through objectively recording brief snippets of conversation in the daily working lives of supervisors, we were able to identify a third element of communication in the workplace (ie., value-related communication) and illustrate the trade-off between production and safety using communication as an exemplar. The results of this study not only advance understanding of the factors that facilitate and support a safe working environment, but they offer a new direction forward in efforts to improve workplace safety.

## Purpose

Effective communication is one of the most important features of a safe work environment. This project applies a novel approach to objectively monitoring communication within the daily working lives of leaders by periodically recording brief snippets of ambient (acoustic) sounds in their workplace environment. This research provides new insights into the trade-off between production and safety and the foundation for developing new countermeasures to support and facilitate a safety climate.

## Rationale

Safety is a major concern for organisations due to the human and financial costs associated with unsafe behaviour, accidents and injury. In Australia, 337 people died from a work-related traumatic injury in 2009-10 (SafeWork Australia, 2012). In the same period, 127,620 serious claims were accepted for workers' compensation which involved a serious injury or disease, representing an incident rate of 12.6 serious claims per 1000 employees (SafeWork Australia, 2012a). Furthermore, the total economic cost of work-related injury in the Australian economy was estimated to be \$60.6 billion (SafeWork Australia, 2012b). These statistics highlight the social and economic significance of workplace safety.

Much attention has been given to determining the organisational factors influencing workplace safety (e.g., Neal & Griffin, 2006; Hofmann et al., 2003; Zohar, 2000). Research has largely focused on the concept, safety climate, defined as the value and priority given to safety (e.g., Neal & Griffin, 2006; Hofmann et al., 2003; Zohar, 2000). However, for the past 40 years, the safety climate literature has largely been focused at a conceptual level, with debates focused on either the difference between the concepts of culture and climate or identifying its subdimensions.

Although this research has advanced our understanding of the concept, limited research has explored safety climate in a translational context. One reason for this is that safety climate has primarily been measured through self-report surveys. The problem with this is that surveys provide limited understanding of the behavioural components underpinning a positive safety climate. Research is urgently required to overcome this limitation so that countermeasures can be designed to target the factors that facilitate and support a positive safety climate and, in turn, safe working practices.

The first step in achieving this goal is to reflect on the findings of past research. Two findings of particular interest are that (i) management commitment has consistently been identified as a subdimension of safety climate (Zohar, 1980) and (ii) leadership styles that promote value-based interactions strengthen the relationship between supervisory safety practices and workers' safety climate perceptions (Neal & Griffin, 2006; Hoffman et al., 2003; Zohar & Luria, 2004). At a conceptual level, this research suggests that the behaviour of leaders plays a key role in creating and encouraging a positive safety climate.

Following this argument, we need to understand the behaviours of leaders that support and facilitate a positive safety climate. One factor of a safety climate that has received limited attention is communication (eg., Cigularov, Chen & Rosecrance, 2010; Newnam, Lewis & Watson, 2012). It is argued that leadership communication plays a key role in creating the perception of a safe working environment. To illustrate, team leaders have the ability to convey the importance of safety behaviour, encourage participation in safety management, and ensure vigilance and motivation among team members. However, there are challenges for leaders in achieving effective communication.

The first challenge in effective communication relates to the workplace context. A distinctive characteristic of many organisations is in their workplace structure; in particular, the level of visibility between supervisors and their workers. The level of visibility refers to the extent to which the layout of the workplace enables a supervisor to directly observe worker performance (Luria et al., 2008). Visibility is less of an issue for task-related performance given that it is often measured against key performance indicators, such as completion rates and efficiency. However, level of visibility has a significant impact on safety-related performance (Luria et al., 2008; Newnam et al., 2012; Newnam & Oxley, 2016). This impact is best represented in high-risk industries, such as the transportation industry where the driving task is conducted independently of management supervision (Newnam et al., 2012). In workplaces such as this, it is difficult for supervisors to collect objective information on workers' safety performance and give appropriate feedback. This structure represents a challenge given there is no method for leaders to monitor behaviour and provide accurate feedback; thus, there is limited incentive for workers to be proactive in their workplace safety performance (Stajkovic & Luthans, 2003).

The second challenge in effective communication relates to competing goals. Conflict among goals is an intrinsic feature of organisations and integrating contradictory forces has been acknowledged as a core function of leadership (Barnard, 1986). Safety has often been identified as a source of conflict with demands for profitability (ie., efficiency). One reason for this is that profitability and safety are both essential goals but often make competing demands upon limited resources (Rasmussen, 1997). In practice, this means that when various safety procedures converge in terms of relative priorities of safety versus efficiency goals, worker perceptions will also converge. That is, workers' perceptions concerning policy and procedural issues will be indicative of the priorities of safety versus efficiency goals within the organisation (Zohar, 2000). The safety versus efficiency 'trade off' can be illustrated in communication processes.

The trade-off between efficiency and safety can be represented in the communication behaviour of leaders (Zohar, 2000), particularly in industries with low visibility (Luria et al., 2008). Assessing the relative priority given to task-related communication over safety communication is an important question as this behaviour is an inherent element in the organisational sense-making process of workers in their assessment of a safety climate. However, before we can explore the trade-off between safety and efficiency we need to better understand the communication that can be classified as safety and task related.

There is a significant amount of research that identifies communication focused on the frequency of safety-related issues (eg., dialogue on safe working practices) as a key factor contributing to a safe work environment (eg., Hofmann & Morgeson, 1999; Cigularov et al., 2012). However, the research literature is yet to define the type of safety communication in the workplace that supports and facilitates a safe working environment. This study extends on previous research in the area of workplace safety and investment in worker health and wellbeing (Mearns et al., 2010) and aims to identify and define safety communication in the workplace. In doing this, we reflect on the role of the social environment in the workplace.

Communication is a central feature of the social environment of the workplace. This environment reflects the atmosphere of social interaction and is observed in the attitudes of workers and quality of socialisation between team members. The factors that support a strong social environment in the workplace are also reflected in the quality of communication practices. Some research has been conducted to support this argument. Mearns et al. (2010) found that investment by an organisation in the health and wellbeing of its workplace - beyond mandatory requirements - was positively associated with an improved safety climate. That is, practices that explicitly placed a priority on worker health (eg., health promotion programs) were found to implicitly communicate the priorities placed on safety within the organisation. We extend this research and aim to identify communication that reflects concern for worker health and wellbeing. We define this communication as value-

based safety communication. Thus, in this study we propose three distinct types of communication in the workplace:

*Task* communication describes dialogue related to productivity and efficiency elements of the work-role task;

*Compliance-related* safety communication describes interactions related to articulating the core safety activities that need to be carried out by individuals to maintain workplace safety (eg., technical aspects of safety, linked to OHS policies and procedures); and

*Value-related* safety communication describes dialogue that does not directly contribute to workplace safety but reflects concern for employee health and wellbeing.

## Key research questions

The objective of this research is to explore communication in the workplace, with the aims to:

1. Identify communication in the workplace and classify into three categories; task communication, value-related safety communication and compliance-related safety communication.
2. Explore the trade-off between efficiency and safety, through exploring the frequency of task and safety related communication.

## Methods

*Participants:* Six workgroup supervisors (2 males and 4 females) were recruited to participate in this study. These supervisors were recruited from a science and technology company in Victoria. Workgroup supervisors were defined as those who monitor and regulate workers in their performance of assigned tasks.

*Measures:* In this project, we periodically recorded brief snippets of ambient (acoustic) sounds in supervisors' workplace environment by using an Electronically Activated Recorder (EAR; Mehl et al., 2001). The EAR was run on an Apple iPod, with an application downloaded for free on iTunes (ie., iEAR). The EAR was programmed to record for 30 seconds every 3 minutes for 8 working hours a day of a 5 day working week. A total of 17.88 hours of acoustic sounds was originally recorded. However, one supervisor requested that the research team delete their data due to the confidential nature of the recordings; thus a total of 12.38 hours of recordings were able to be coded.

*Procedure:* On the first day, participants were thoroughly informed about the EAR procedure. We undertook a number of processes to ensure privacy and confidentiality of the data. First, the data extracts were short enough to capture only a small amount of contextualised personal information. Second, before the investigators accessed the data, all participants were given the opportunity to listen to their iEAR recordings and delete any parts that they did not want on record. Third, in the coding process, any personally identifying information was omitted from the transcripts. Fourth, all employees in the workplace were notified of the research and the investigators encouraged participants to wear the device visibly and to readily mention the EAR in conversations with others; this process ensured the confidentiality of other workers' utterances.

*Analysis:* The snippets of ambient sounds were transcribed verbatim by a member of the research team. Following this, a trained research officer coded the acoustically detectable features of supervisors' moment-to-moment behaviours, social environments and conversations. The analysis was initiated by the development of a coding inventory. This



inventory was developed through coding an initial subset of conversations, which was then verified by a second member of the research team. The final inventory was used to code the (i) type of interaction, (ii) category and, (iii) description of the dialogue.

## Research findings

### Descriptive data

Table 1 presents an overview of the data collected. The maximum number of files recorded over the data collection period was 660. The participants were encouraged to wear the device as much as possible. However, they were advised that they could turn off the device, if they perceived the situation was not suitable to be recorded (ie., confidential meetings). As a result, the percentage of all files recorded ranged from 17%-100%. From the files recorded, the number of files containing voice ranged from 19%-74%. This data was used to address the objectives of this study.

**Table 1: Number and percentage of files recorded**

	Number of files recorded	% of ALL files recorded*	Number of files containing voice	% of voice files recorded
<b>Supervisor1</b>	274	42%	89	32%
<b>Supervisor2</b>	137	21%	102	74%
<b>Supervisor3</b>	660	100%	267	40%
<b>Supervisor4</b>	112	17%	21	19%
<b>Supervisor5</b>	303	46%	140	46%
<b>Supervisor6</b>	660	100%	*Deleted	0%

\*Files deleted on request of volunteer

### Analysis

The first objective of this study was to identify communication in the workplace and classify into three categories, namely task communication, value-related safety communication and compliance-related safety communication. This study identified examples of all three types of communication. Table 2 presents a definition of the different communications identified in this study, and Table 3 presents example quotes for each category of communication type.

**Table 2: Definitions of communication**

Communication type	Category	Definition
<b>Task</b>	Productivity	Discussions specifically related to the conduct work-role tasks (eg., setting up for a work experiment)
	Efficiency	Discussions relating to the physical surroundings of work-tasks that support the conduct of work-role tasks(eg., booking a room)
	Workflow	Discussions relating to factors that facilitate the operation of work-tasks (eg., timetabling and work meetings)



	Human resources	Discussions relating the administration of work-tasks (eg., work-role expectations and performance progress)
<b>Value-related safety</b>	Greetings	Discussions relating to the acknowledgment of fellow employees
	Personal discussions	Discussions relating to life outside of the work context (eg., activities on the weekend, children)
	Workplace relations	Discussions relating to the landscape of the workplace culture (e.g., staff politics)
<b>Compliance-related safety</b>	Workplace safety	Discussions specifically relating to safety in the conduct of work-role tasks (eg. wearing safety goggles)

**Table 3: Examples of communication**

Communication type	Category	Quotes
<b>Task</b>	Productivity	<p><i>“you can probably even put them [vials] with those, or you can put them with the contaminated waste, yeah.”</i></p> <p><i>“now we’ve got two serum free medias, so it will be interesting to see whether four of them are dead ducks”</i></p>
	Efficiency	<p><i>“So Tuesday next week, ummm, 1:30, if we could have a room somewhere ”</i></p> <p><i>“ . . .because that’s, it’s much easier for me to do that [picking up a work vehicle].”</i></p>
	Workflow	<p><i>“...I’ve discussed it with you and we’ll come to a mutually agreeable time, ok? ”</i></p> <p><i>“...make sure she takes the time to explain, on the board, exactly what she’s testing.”</i></p>
	Human resources	<p><i>“ I still haven’t got a approval for a new staff member, so she still hasn’t started.”</i></p> <p><i>“It’s a lot easier to get into those levels and positions”</i></p>
<b>Value-related safety</b>	Greetings	<p><i>“Hi guys!”</i></p> <p><i>“G’day ”</i></p>
	Personal discussions	<i>“That’s alright, ‘cos I hate [name of AFL team], I don’t mind [name of AFL team] but I hate [anem of AFL team]. And I</i>

		<i>hate [name of AFL player], I can't stand him, he's real slime."</i>
	Workplace relations	<i>"Oh, I get angry at that [job positions]. It's not fair, it's not right." "Does [colleague] go to congresses overseas?"</i>
<b>Compliance-related safety</b>	Workplace safety	<i>"Here's your safety glasses, lab coat, "  "We need to bring a few safety glass to here"</i>

The second aim of this project was to assess the trade-off between safety and efficiency. We did this through exploring the frequency of task and safety related communication. Table 4 presents an overview of the frequency of the utterances based on communication type and category. The results show that the majority of communication were task-related (58%). In comparison, value-related safety communication was identified in 14% of the utterances and compliance-related safety communication in only 2.91% of the conversations (ie., 29.26% of utterances included 3<sup>rd</sup> party conversation and/or no speech was recorded).

Productivity communication was the most frequently recorded (28.64%) type of task communication, and this was followed by conversations regarding workflow (23.95%). In the category of value-related communication, the majority of the dialogue related to 'life outside the workplace' (ie., personal discussions) (5.5%). Only a small percentage of recordings were identified as compliance-based safety communication (2.9%).

**Table 4: Frequency and percentage of recording based on communication type and category**

Communication type	Category	Frequency	Percentage
<b>Task</b>	Productivity	177	28.64%
	Efficiency	10	1.62%
	Workflow	148	23.95%
	Human resources	28	4.53%
	<b>TOTAL</b>	<b>363</b>	<b>58.74%</b>
<b>Value-related safety</b>	Greetings	16	2.59%
	Personal discussions	34	5.50%
	Workplace relations	13	2.10
	<b>TOTAL</b>	<b>63</b>	<b>10.19%</b>
<b>Compliance-related safety</b>	Workplace safety	18	2.91%
	<b>TOTAL</b>	<b>18</b>	<b>2.91%</b>
	<b>TOTAL</b>	<b>444</b>	<b>71.84%*</b>

\* 29.26% of utterances included 3<sup>rd</sup> party conversation and/or no speech

## Discussion, conclusions and implications

The aim of this research was to explore communication in the workforce, with the aims to (i) identify communication in the workplace and classify into the categories, task communication, value and compliance related safety communication and (ii) explore the trade-off between efficiency and safety, using the frequency of communication as an exemplar. These objectives were achieved through periodically recording brief snippets of

ambient (acoustic) sounds in the workplace environment of supervisors, using an iEAR. This research is unique in that safety communication has typically been assessed through self-report methods (eg., Hofmann & Morgeson, 1999; Cigularov et al., 2012). Given the limitations of self-report (ie., failure of recall and social desirability; see Cronbach, 1970), there is currently limited knowledge regarding the factors that support and facilitate perceptions of a safe working environment. The findings of this study not only extend theory in the area of workplace safety, but it presents a direction forward in the development of countermeasures focused on promoting a safe working environment.

The literature has well established that communication in the workplace consists of dialogue related to work-role tasks and safety compliance. However, this is the first study to identify a third element of communication, namely value-related safety communication. We identified three different types of value-related safety communication, including greetings, life outside work discussions and discussions relating to workplace relations. The findings of this study extend on previous research in the area of health investment and safety (Mearns et al., 2010) through establishing value-related safety communication as a legitimate form of communication in the workplace.

Future research is needed to explore whether value-related communication facilitates the assessment of a safety climate. It is our contention that this type of communication supports the translation of the mandatory requirements inherent in managing safety (ie., compliance with OHS laws and regulations) through the mechanisms of trust and respect within workplace relations, particularly within the leader-member exchange relationship. In support of this argument, past research identified that employees are more likely to approach their supervisor about safety risks in the workplace (eg., fatigue) if there is a quality supervisor-worker relationship (Hoffmann et al., 2003).

The data also allowed us to objectively assess the trade-off between safety and efficiency. This study is the first to operationalise this trade-off through identifying the frequency of task and safety related communication. The results showed that more than 50% of the utterances were task communication, while safety communication (combined frequency of value and compliance related communication) was identified in only 13% of the utterances recorded. Examples of task communication included productivity, efficiency, workflow, and human resources.

This study also found that compliance-based safety communication was the least communicated dialogue. This finding suggests that supervisors in this study were not reinforcing safety behaviours. Although 'reactive' approaches to safety management, such as learning from accidents, are considered an effective form of safety leadership, safety leadership is more likely to be optimised if there is also a focus on practices that promote safe working behaviours (eg., rewarding safe working behaviour; Griffin & Talahi, in press). In the absence of more 'proactive' safety leadership styles, it is likely that employees perceive a workplace environment that promotes efficiency through 'getting the job done' as opposed to increasing productivity through investing in employee health and wellbeing.

## Recommendations

This research provides new insights into the way leaders communicate safety. The results of this study offer recommendations to inform existing WSV strategies and new approaches to improving workplace safety. In regards to existing strategies, there is currently a government commitment to the development of a set of indicators that can be used to benchmark within and across industry to actively improve OHS. In this study, we identified value-related safety communication as a distinct form of communication, separate to communication directly

assessing compliance with safety policies and procedures. The results of this study could be used to inform the development of a more comprehensive safety communication assessment tool that goes beyond mandatory requirements guided by OHS laws and regulations (eg., communication regarding the appropriate use of safety equipment) and incorporate indicators focused on value-based interactions (eg., greetings, personal discussions).

WSV could also use the findings of this research to inform existing communication strategies. The results of this study are in line with past research that has found that investment in worker health and wellbeing is an important element in creating a work environment that supports and values safety. Thus, WSV communication strategies could target health investment practices through a focus on their safety benefits as well as the benefits to worker health and health climate.

This study also establishes a foundation for the development and implementation of countermeasures that target safety climate. First, the results of this study identified examples of value-based safety communication, which we argue is critical in the development of a quality leader-member exchange relationship and in the assessment of a safety climate. Based on this argument, developing the interpersonal skills of supervisors may be an effective countermeasure for improving workplace safety (Newnam & Oxley, 2016). Interpersonal skill development in the role of a safety leader has largely been overlooked. Within the workplace, safety management involves constant interaction with staff to ensure vigilance and attention to and awareness of risks in the workplace. Position descriptions outline the roles and responsibilities of supervisors in the safety management of workers as stipulated by OHS regulations, yet the process in which this information is translated to workers is often overlooked. As discussed throughout this report, effective translation of safety policies and procedures requires a high level of interpersonal skill. Thus, a countermeasure focused on developing the interpersonal skills of supervisors should be considered a key strategy in strengthening workplace safety.

The findings of this study also provide opportunities to further research in workplace safety. First, future research could aim to better understand the trade-off between production and safety through quantitatively exploring the relationship between this trade-off and outcomes, such as safe working behaviour and injury and death in the workplace. This research could also aim to determine the frequency of safety-related communication (ie., benchmark) required to support and facilitate a safe working environment. Second, future research could explore if the frequency of safety communication facilitates the process of vertical integration. That is, research could explore if decisions at higher level of the workplace system are reflected in safety practices occurring at lower levels of the system, and if information at lower levels inform decisions and actions regarding safety at higher levels of the hierarchy.

## Limitations

Although this research presented a unique method for exploring communication in the workplace, the limitations of the study need to be acknowledged.

First, this research had a small sample size. Due to the sensitive nature of this method, recruitment was challenging. We found that either senior level management were unwilling to support the recording of conversations in the workplace, supervisors were uncomfortable with being recorded, or staff working in the same areas as supervisors were unwilling to (verbally) consent to the process. Objectively monitoring communication in the workplace presents a positive direction forward in advancing countermeasures in this field; thus, future

research should identify complementary approaches to recruitment using the iEAR. For example, one possible approach could be monitoring conversation at set times of the day. Future research could also validate the communication of supervisors through examining workers perceptions of its meaning or objective.

Second, this research identified only brief snippets on conversation (ie., sampling rate of 20% based on a recording period of 30 seconds every 3 minutes). Although the iEAR method has been established as a valid method of examining workplace interactions (Holleran et al., 2011), and in populations with low base rate behaviours (see, Mehl et al., 2012), it is possible that we did not capture an accurate snapshot of communication in this organisation. For example, safety communication may have been discussed at times where recordings did not take place (eg., before or after leaving the office, confidential meetings) or workers did not perceive the communication as it was intended by the supervisor. Future research could overcome this limitation by combining this method with other observational methods, such as direct observations and focus groups/interviews.

Direct observational data would also allow us to assess the safety practices of workgroup supervisors (non-verbal behaviours) and the interaction with patterns of communication. For example, the frequency and type of safety-related communication may vary depending on the supervisors' compliance with OHS regulations (ie., using personal protective equipment) and this may influence not only the quality of exchange relationship but the development of perceptions of a positive safety climate.

## Conclusion

This study presented a novel approach to exploring communication in the workplace. Through objectively recording brief snippets of conversation in the daily working lives of supervisors, we were able to identify two distinct elements of safety communication and operationalise the trade-off between efficiency and safety, using communication as the exemplar. The results of this study not only advance theory in the area of workplace safety and offer promising avenues for future research, but they inform the development of targeted countermeasures designed to improve safety in the workplace.



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