

Who guards our guardians? The use of ethnography to study how railway transit officers avoid injury

Christine Teague¹ and Dr David Leith²

¹Edith Cowan University, Perth, Western Australia

²Leith Communications, Perth, Western Australia

1 Introduction

“You can’t tell me what to do. You’re just a f...ing plastic cop,” the aggressive passenger retorted to a polite request from the transit officer to discard the alcohol he was drinking.

This was the researcher’s initiation to fieldwork with the transit officers, which the researcher later learnt was a mild introduction to night life on the urban rail passenger service.

The transit officers have often remarked that anybody wanting to understand the violence and provocation that they face would need to work along side them. This research project responds to these remarks in order to gain an understanding of the safety culture and everyday work experience of the transit officers with the aim of developing strategies to reduce their risk of injury. Although the results of the study are yet to be compiled, the value of the ethnography as a method of studying transit officers at work has proven advantageous compared with existing methods based on surveys and audits.

The transit officers, whose core functions are passenger safety and customer service, form part of the security section of the Transperth Train Operations (TTO) which itself is a division of the Public Transport Authority of Western Australia (PTA). The PTA is the government department responsible for the public train, bus and ferry services in Western Australia. Like urban railway systems the world over, the PTA suffers from anti-social behaviour by patrons, which ranges from bad language to severe violence. It has taken a number of major initiatives to curb these activities including installing an all-embracing closed circuit television (CCTV) monitoring system, ticket barriers at most stations, and high levels of patrolling by transit officers at night.

The transit officers are therefore in the frontline of deterrence against anti-social behaviour and violence. Statistics for incidents and injuries remain confidential. However, it is known that the incident rate is above that of workers in traditionally hazardous industries such as construction. To hopefully reduce this level of incident and injury, the PTA has ensured that transit officers are highly trained and equipped to avoid or defuse anti-social behaviour and violence. There is also in place a new, comprehensive safety and health system. Despite these measures, the injury frequency rate has reduced only slightly, which has led to a search for underlying causes and perhaps remedies.

Some people have questioned whether such causes are deeply embedded in the attitudes, practices, beliefs, norms, attitudes, practices and rites of the transit officers and their supervisors and managers – the workplace culture (Pidgeon, 1991, p. 134). The study described in this paper has been undertaken to find out if there is a link between culture and injuries. If this is so, then it should be possible for culture to play a part in injury reduction. Such a method of examining safety on workplaces is a significant departure from the conventional approach used by both academic and industry investigators, which is based on workers surveys and quantitative safety audits.

2 The study

2.1 Ethnography

In order to fully understand the culture and work experience of the transit officers an ethnographic protocol was chosen. Ethnographic research originates in the discipline of anthropology where researchers immersed themselves in the culture of the people they wished to research and provided detailed qualitative descriptions of what they observed. Geertz (1973, p.10) refers to this as “thick description” and views the ethnographer as faced with a “multiplicity of complex conceptual structures, many of them superimposed upon or knotted into one another, which are at once strange, irregular, and inexplicit, and which he must contrive somehow first to grasp and then to render”. This method requires the researcher to study the transit officers in their natural setting and capture the uniqueness of the group. Brooks, (2005, p. 3) refers to this “by means of methods which capture their social meanings”.

In qualitative research the behaviours and attitudes of the group to be studied are central to the research process. Importantly, qualitative researchers want those who are studied to speak for themselves, by their own words and actions. It is an interactive process which involves, in this instance, the researcher participating directly in the workplace and building close relationships with the transit officers to tap into “what people take for granted about their work, and thus, do not ordinarily discuss” (Jordan & Dalal, 2006, p. 368).

Ethnography is not a new method of research and it has often been used in the past in qualitative research in the workplace. There, ethnographies have normally been confined to a specific work group or profession such as commercial fishing (Brooks, 2005), police (Spano, 2007), fire fighters (Desmond, 2006). However, Leith (2003) examined safety communication in a minerals refinery which was a comparatively innovative use of an ethnographic application to study the relationship between culture and injuries.

In contrast to this in-depth method of research, the predominant method used previously for studying organisational cultures and their effect on safety has been the survey method (Glendon & Stanton, 2000; Hopkins, 2006). Examples include manufacturing (Cheyne, Oliver, Tomas, & Cox, 2002; Cooper & Phillips, 2004; Zohar, 2000), air transport (Gill & Shergill, 2004), offshore environment (Cox & Cheyne, 2000), nuclear industry (Harvey *et al.*, 2002), heavy and light manufacturing industries and outdoor workers

(Williamson, Feyer, Cairns, & Biancotti, 1997). Surveys have often been used in combination with safety audits (Grote & Kunzler, 2000). However, the survey method measures people's perceptions of 'how things are done' which may not necessarily coincide with what actually occurs (Hopkins, 2006). Schein (1992) argues that even if a questionnaire was designed covering many dimensions, one might still not know which of those dimensions are important to the group in regard to any particular issue. "The problem with this model is that it leads to more of an illusion of objectivity than actual objectivity. It feels safe to argue that culture is simply that which has been operationally defined as culture, but that approach may lead to conclusions that have very little to do with what actually goes on in organizations" (p. 187).

This analysis of the gap between survey data and everyday life is supported by Guldenmund (2000) who argues that researchers from sociology or the (social) psychological research tradition have a reductionistic approach and are "inclined to assume that a given culture or climate can be described by a limited number of dimensions" (Guldenmund, 2000, p. 226). Hodson (2004), whilst criticising the many superficial safety culture questionnaires that have been carried out, argues that surveys usually study worker attitudes rather than actual worker behaviour, indicating a gap in current workplace research due to an over reliance on survey data. This data relies on self reports rather than direct observation over a period of time, whereas ethnographers have the unique ability to study those behaviours in the work setting.

Glendon and Stanton (2000) assert that many of the survey questionnaires undertaken in the study of safety in organisations involved selected employee samples, often at a time of organisational change, which may have reflected a particular response bias. They further allege that observational studies "while superficially offering ecological validity, are often of too short a duration to be able to provide sufficiently large samples of behaviour" (Glendon & Stanton, 2000, p. 209). Cooper (2000) refers to surveys as being superficial, whilst Guldenmund (2007, p. 725) refers to these safety questionnaires as "quick and dirty" as there is an inability to screen out the unwanted influences in the responses unless a very large survey is undertaken which negates the quickness of the method. Further, Guldenmund states that "While values regarding safety seem to be important they have not been successfully assessed through self-administered questionnaires yet", and continues to say that "safety value assessment simply requires a different research strategy" (p. 741).

Another common form of quantitative research is interviews. However, Tope *et al.* (2005) show that on their own they are less effective than observation and argue that interviews do not provide sufficient detail to understand the nuances of worker behaviour, and the outsider has no sense of what is taken for granted. In contrast, insider status gives the researcher access to the realities of events as they occur. As Tope *et al.* (2005, p. 481) assert, "observation-based studies are more effective in obtaining information about often-subtle workplace behaviours and attitudes". These behaviours and attitudes may not surface if the researcher conducts interviews alone, as the specific topic may not be broached.

Gans (1999), whilst acknowledging the virtues of observation, in particular participant observation, raises the problem of the cost of doing such research due to the labour intensity and time required for the research. Whilst noting that an ethnographic approach is time-consuming, Glendon and Stanton (2000) advocate the use of this approach as possibly the most valid from an interpretive perspective and assert that “comprehensive ethnographic studies of safety within contemporary organisations are awaited,” (p. 209).

2.2 The process of this research

Ethnographic research has a degree of flexibility as to how the researcher will interact with the group to be studied. Tope *et al.* (2005) suggests that the dominant role the researcher adopts is the key to the information the researcher achieves. They further argue that “participation is also invaluable for achieving ‘insider status’ as someone who is trustworthy” (p. 473).

In this research project, recognising the significance of obtaining “insider status” coupled with the need to provide a solid foundation for the ethnographic study, the researcher commenced the fieldwork by joining a new intake of transit officers undertaking the twelve-week training program. Importantly, taking this path enabled the researcher to obtain credibility amongst the transit officers by shared experiences, provided knowledge of the tasks to be undertaken on the job, assisted in fostering trust between the researcher and transit officers and demonstrated the researcher’s commitment to the research task by spending such a long time studying all aspects of the position. Additionally, this training provided important background information and necessary workplace safety skills that the researcher was able to draw on to evaluate training versus experience on track.

On completion of the transit officer training course and prior to working on track, the researcher spent a further month in the control monitoring room (CMR) obtaining an overview of the many activities that occur throughout the metropolitan rail system involving transit officers. This control monitoring room, which is in an undisclosed location, is the hub of the metropolitan train security operations. From this centre, the Shift Commander, assisted by the CMR video operators, monitor activities from closed circuit TV cameras which are situated at all stations, communicate with all transit officers by radio, direct back-up by other transit officers or police when required, and additionally make announcements directly to passengers. From this communication heart, the Shift Commander can interrogate the central police computer about the identities of miscreant passengers, warnings against their names or bench warrants for their arrest, which often occurs.

Having obtained this overview of the transit officer operations, the researcher spent four months working alongside them observing their interaction, and their communications with the public; between themselves, and with management. The researcher worked their shifts and variations of duty on trains, stations and Delta vehicle patrols. Informal conversations with the transit officers continued throughout this process. Questions arising during the work process were answered by transit officers on a casual basis or when required by a supervisor. The information gleaned during this time informed the

questions to be asked during formal interviews which took place at the end of the four months work on track. These interviews, which were purely voluntary, took place with transit officers, supervisors and management. They were recorded, transcribed and later analysed for consistent themes. Using a double approach (participant-observation and interviews) yielded more information than one alone, as Hodson (2004) and Cooper (2000) advocate.

3. Safety culture

Over the last two decades there has been a growing interest in the concept of safety culture, particularly in high-risk industries. The term 'safety culture' rose to prominence following the release of the initial report by the International Atomic Energy Agency (IAEA) on the Chernobyl nuclear accident (IAEA, 1986). This interest continued to grow as a result of further large-scale accident investigations, where the culture of the organisation was identified as significantly contributing to the occurrence of events. Previously, simple worker error might have been found to be the cause (Hopkins, 2000).

In this regard, the NASA Space Challenger Incident (Rogers Commission Report, 1986), Exxon Valdez oil tanker grounding (National Transportation Safety Board, 1990), Piper Alpha oil platform explosion (Cullen, 1990), Glenbrook Rail Accident (McInerney, 2001) all led to the recognition by safety professionals, and by safety regulators (particularly of high risk enterprises, such as the nuclear, air and rail industries), of the limitations of traditional safety management systems which are based on hazard identification and rectification. Hopkins (2005b) believes that without considering culture, an industry's safety system may be no more than a pile of manuals occupying shelf space which will fail to portray what is actually occurring within the organisation. Moreover, the literature indicates that a "positive" safety culture is a means of organisations achieving higher safety standards and thereby reducing the potential for both minor incidents and large scale disasters (Cooper, 2000; Hopkins, 2005a, 2005b; Reason, 1995). Reason (1997, p. 191) argues that "Few phrases occur more frequently in discussions about hazardous technologies than safety culture. Few things are so sought after and yet so little understood".

A number of definitions of safety culture can be found in the literature. A commonly used one is the definition that was originally developed by the Advisory Committee on the Safety of Nuclear Installations (ACSNI) and subsequently adopted by the British Health and Safety Executive (Cooper, 2000; Dannatt, Marshall, & Wood, 2006):

"The safety culture of an organisation is the product of individual and group values, attitudes, perceptions, competencies and patterns of behaviour that determine the commitment to, and the style and proficiency of, an organisation's health and safety management.

Organisations with a positive safety culture are characterised by communications founded on mutual trust, by shared perceptions of the importance of safety and by

confidence in the efficacy of preventive measures.” (Health and Safety Executive, 2005, p. 3; Health and Safety Laboratory, 2002, p. 2; Reason, 1997).

Cooper (2000) advocates that this definition embraces both a functionalist view of safety culture in terms of purpose, which emerges from concepts such as values, attitudes, competencies and patterns of behaviour, and an interpretative view which is created by social groupings within the workplace. Schein (1992) believes that not every group or collection of people develop a culture, and only when there has been enough of a shared history can the group be said to have developed some form of culture.

Guldenmund (2000) advances the view that the element missing in many publications on safety culture is the lack of an empirical model outlining the method through which safety culture is rooted in the organisation’s practices and systems. Those researchers who do have a basic model, such as Glendon and Stanton (2000) tend to be adaptations of Schein’s (1992) three level cultural model. These three levels are (1) artifacts, (2) espoused values and (3) basic underlying assumptions. Schein (1992) refers to artifacts of a group as the visible organisational structures and processes which include the physical environment; its style which includes the group’s language, clothing, emotional displays, myths and stories relating to the organisation; published lists of values; and the observable rituals and ceremonies of the group. The espoused values of the group relate to the strategies, goals and philosophies that the group adopts. The third, or deepest, level of culture – the basic underlying assumptions of the group – refers to the unconscious, taken-for-granted beliefs, perceptions, thoughts and feelings that the group hold. Schein (1992) posits that to really understand the culture of a group it is necessary to understand these basic underlying assumptions that the group hold and the learning process by which the basic assumptions were developed. Whilst Cooper (2000) supports a three concept framework of safety culture, he advocates that the importance lies in the dynamic reciprocal relationships between the different concepts, which he refers to as (1) psychological aspects – members’ perceptions about and attitudes towards organisational goals; (2) members’ behaviour; and (3) organisational or corporate aspects which he views as the organisation’s systems and sub systems which support the behaviour.

The literature has highlighted the necessity for organisations to develop effective safety cultural enhancing practices and has identified a number of components or characteristics of a culture that is conducive to good safety. Reason (1997) identified five components which he describes as “informed culture”, “reporting culture”, “just culture”, “flexible culture” and “learning culture”. Whilst different researchers in the literature have in some cases used different labels for the various components, the underlying concepts are essentially the same. However, one term that is synonymous throughout the literature is leadership and the emphasis on the need for the highest levels of management to show unequivocal commitment to safety and the necessity for this to be understood by all throughout the organisation (Health and Safety Executive, 2005; Helmreich & Merritt, 1998; Hopkins, 2005b; Moray, 2006). Schein (1992) argues that the only thing of real importance that leaders do is to create and manage culture. To distinguish leaders from managers or administrators, Schein argues that “leaders create and change cultures, while managers and administrators live within them” (p. 5). Subsequently, what these leaders

pay attention to shapes employees' perceptions of what is important (Health and Safety Executive, 2005; Helmreich & Merritt, 1998; Schein, 1992; Westrum, 2004).

However, some researchers of workplace cultures have found that organisations contain sub-cultures that are so strong that they defy the culture-setting actions of such leaders. These ethnographic studies began with the famous Hawthorne studies in the 1920s and 1930s (Roethlisberger, Wright & Dickson, 1939). More recently there was the research of shop stewards in England by Batstone, Boraston and Frenkel (1977) and the exposition by Willis (1981) of how working class children end up occupying working class jobs. In Australia, Kriegler (1980) made the same discoveries when he studied the Wyalla shipyard of BHP in the 1970s. More recently, Leith (2003) revealed how safety communication flowed through the organisation in an industrial refinery in Western Australia.

Such studies show why management often fails to implement a safety culture that will bring a safer workplace. The reason is that accidents occur in their workplaces among people who inhabit a different culture from management's. Vital sections of factories or refineries are cultures over which management has limited influence. The workers believe that management has a culture which is alien to the culture of the shop floor where the real hazards lie in wait and where injuries occur.

Harvey, Bolam and Gregory (1999) are among a number of authors on the subject of safety who warn of this danger. "Management often assumes that the belief systems held by themselves are the same as those which employees hold, just further up or down on the scale" (p. 10). They demonstrated how wrong this assumption was by researching nuclear power plants in which safety was the top priority. They found two distinct safety cultures: a management safety culture and an industrial worker safety culture. They concluded:

"Perhaps the most fundamental thing that must be said is that if managers and industrial workers are operating within different attitudinal and belief frameworks, then clearly there are potential problems for communication, safety responsibility, risk-taking behaviour and a whole host of other safety-related issues. It could be like managing people who speak a different language, have different priorities, customs and practices and who do not see things from your perspective.

"How then do you communicate? Well, you have to learn the language, understand where they are coming from and be able to empathise. Indeed, you need to be able to understand your own language, customs and so on before you can achieve this with theirs" (p. 12).

Leith (2003) observed that in a minerals refinery, the company was intent on bringing the shop floor safety culture into alignment with its own management culture. The workers responded by struggling to preserve their authority over the conduct of their own tasks while ostensibly remaining loyal employees. In the context of safety, the workers wished to preserve the right to make their own decisions about what was safe and unsafe, or at least for management to respect their opinions of what was safe and unsafe. They actively

defended existing work practices against the efforts of management to replace them with “safer” ones. Leith saw management sometimes give up the battle to change these work practices, attributing their failure to worker recalcitrance, rather than recognising that two cultures were speaking different languages.

4. Transit officers

Transit officers are selected following an extensive pre-employment process including strict medical, psychological and fitness requirements being met. The successful applicants are then required to complete and pass the twelve-week comprehensive training program. This program includes issues such as customer service, multicultural awareness, patrol duties, legal studies, court procedures, self defence and use of batons and handcuffs (Public Transport Authority, 2006). Although the transit officers are not policemen, they do have some similar powers, such as the ‘power of arrest’ to deal with certain offences committed on railway property (Public Transport Authority, 2006), which may lead to the development of cultural traits similar to the police. A key difference, however, is that transit officers deal with issues as they arise whereas the police tend to respond to an event after the occurrence.

As one of the transit officer’s said “Out here you’re out of the training, into the fire, you’re dealing with it and you do it every day, face to face contact, arresting, rolling on the ground, doing the whole lot. A copper wouldn’t even speak to as many people in his first twelve months as what we do in our first three. Plus not only that, with us, something happens we’re there on the spot, we’re dealing with it in the heat of the moment and it’s full on face to face, get down and dirty with the baddies. Whereas out in the street something happens, someone rings the coppers, by the time they get there it’s either defused or the baddies have gone away.”

A professional culture such as the transit officers’ may have a special expertise which enables its members to undertake tasks or services that a lay person cannot, leading to a high sense of self-worth for the members (Hayward, 1998). Coady (2000, p. 62) refers to the requirement by some cultures for “ruthlessness, toughness and suspicion”. Conversely, the drawback is that such characteristics can lead to the feeling of invulnerability by its members, which can become an integral part of the self-concept endorsing unrealistic attitudes about their performance capabilities when faced with various kind of stressors (Helmreich & Merritt, 1998).

A common response to violent workplaces has been to recruit people best equipped to protect themselves physically. As Warren and James state (2000, p. 54), in relation to the police, “the capacity to defend oneself is seen by many police as a crucial feature of the ways in which police command respect and exert their authority”. This strategy takes little account of the potential escalation of tension. In contrast, it is an innovation to respond to escalating violence by appointing people who are equipped to protect themselves through communication and empathy skills. As Chan (2000, p. 105) advocates in her research with police “violent outcomes are sometimes avoidable by

changing the line of interpretation used by the officer and employing communication techniques that de escalate conflict”.

Eighteen months ago, the PTA brought in a new plan for the way transit officers conducted their operations, called the “X plan”. This plan assigned transit officers and their supervisors to individual railway lines in Perth. The end-stations on those lines became the home base for the line operations and the location of each line supervisor. (Previously all transit officers were based at and operated from the Central Perth Station.) The researcher found that the plan brought changes to the culture of the transit officers, including transit officers taking ownership for their particular line, to the point of becoming protective and thinking their line is the best. As one transit officer said “you get to know a lot of the baddies better, they get to know you, you can sort of police your line a lot easier because you’re you know, familiar faces, that sort of thing”.

5. Conclusion

Adopting an ethnographic method of inquiry has enabled the researcher to be deeply immersed in the working lives of the transit officers and to experience how their culture affects their interactions with the passengers who may cause them injury. Additionally, it has enabled the researcher to understand how decisions taken elsewhere in the organisation can impact on the culture and safety of the transit officers.

As one transit officer said “I’m amazed that you’re actually allowed to be out here with us because you are getting first hand knowledge. You get to watch the way that we deal with things. I think this is fantastic.”

Compared with other methods of research, the study is expected to throw up factors which have not previously been identified and which may lead to transit officers working more safely and with fewer injuries.

- Australian Standard AS 4292.1. (2006). *Railway Safety management Part 1: General requirements*. Retrieved. from.
- Batstone, E., Boraston, I. & Frenkel, S. J. (1977). *Shop stewards in action: The organization of workplace conflict and accommodation*. Oxford: Blackwell.
- Brooks, B. (2005). Not drowning, waving!: Safety management and occupational culture in an Australian commercial fishing port. *Safety Science*, 43(10), 795-814.
- Chan, J. (2000). Backstage Punishment: Police Violence, Occupational Culture and Criminal Justice. In T. Coady, S. James & M. O'Keefe (Eds.), *Violence and Police Culture* (pp. 85 - 108). Melbourne, Victoria: Melbourne University Press.
- Cheyne, A., Oliver, A., Tomas, J. M., & Cox, S. (2002). The architecture of employee attitudes to safety in the manufacturing sector. *Personnel Review*, 31(6), 649 - 670.
- Coady, C. A. J. (2000). What Dirt? In T. Coady, S. James & M. O'Keefe (Eds.), *Violence and Police Culture* (pp. 249 - 268). Melbourne, Victoria: Melbourne University Press.
- Cooper, M. D. (2000). Towards a model of safety culture. *Safety Science*, 36(2), 111-136.
- Cooper, M. D., & Phillips, R. A. (2004). Exploratory analysis of the safety climate and safety behavior relationship. *Journal of Safety Research*, 35, 497 - 512.
- Cox, S. J., & Cheyne, A. J. T. (2000). Assessing safety culture in offshore environments. *Safety Science*, 34(1-3), 111-129.
- Cullen, L. (1990). *The Public Inquiry into the Piper Alpha Disaster*. London.
- Dannatt, R., Marshall, V., & Wood, M. (2006). *Organising for Flight Safety*. Retrieved from <http://www.atsb.gov.au>.
- Desmond, M. (2006). Becoming a firefighter. *Ethnography*, 7(4), 387-421.
- Gans, H. J. (1999). PARTICIPANT OBSERVATION IN THE ERA OF "ETHNOGRAPHY". *Journal of Contemporary Ethnography*, 28(5), 540-548.
- Geertz, C. (1973). *The Interpretation of Cultures*. United States: Harper Collins.
- Gill, G. K., & Shergill, G. S. (2004). Perceptions of safety management and safety culture in the aviation industry in New Zealand. *Journal of Air Transport Management*, 10(4), 231-237.

- Glendon, A. I., & Stanton, N. A. (2000). Perspectives on safety culture. *Safety Science*, 34(1-3), 193-214.
- Grote, G., & Kunzler, C. (2000). Diagnosis of safety culture in safety management audits. *Safety Science*, 34(1-3), 131-150.
- Guldenmund, F. W. (2000). The nature of safety culture: a review of theory and research. *Safety Science*, 34(1-3), 215-257.
- Guldenmund, F. W. (2007). The use of questionnaires in safety culture research - an evaluation. *Safety Science*, 45(6), 723-743.
- Harvey, J., Bolam, H. & Gregory, D. (1999). How many safety cultures are there? *The Safety & Health Practitioner*, 17(12), 9.
- Harvey, J., Erdos, G., Bolam, H., Cox, M. A. A., Kennedy, J. N. P., & Gregory, D. T. (2002). An analysis of safety culture attitudes in a highly regulated environment. *Work & Stress*, 16(1), 18-36.
- Hayward, B. (1998). Safety and Culture. In K. Goeters (Ed.), *Aviation Psychology: A Science and a Profession* (pp. 277 - 285). Aldershot, England: Ashgate Publishing Company.
- Health and Safety Executive. (2005). *A review of safety culture and safety literature for the development of the culture inspection toolkit*. Retrieved. from <http://www.hse.gov.uk/PUBNS/index.htm>.
- Health and Safety Laboratory. (2002). *Safety Culture: A review of the literature*. Retrieved 23/10/2006. from www.hse.gov.uk/research/hsl_pdf/2002/hs102-25.pdf
- Helmreich, R., & Merritt, A. (1998). *Culture at Work in Aviation and Medicine: national, organizational, and professional influences*. Vermont USA: Ashgate Publishing Limited.
- Hodson, R. (2004). A Meta-Analysis of Workplace Ethnographies: Race, Gender, and Employee Attitudes and Behaviors. *Journal of Contemporary Ethnography*, 33(1), 4-38.
- Hopkins, A. (2005a). *Safety, Culture and Risk* (1st Edition ed.). Sydney: CCH Australia Limited.
- Hopkins, A. (2000). *Lessons from Longford: The Esso gas plant explosion*. Sydney: CCH Australia.

- Hopkins, A. (2005b). *Safety, Culture and Risk The Organisational Causes of Disasters* (1st ed.). Sydney: CCH Australia Limited.
- Hopkins, A. (2006). Studying organisational cultures and their effects on safety. *Safety Science, In Press, Corrected Proof*.
- IAEA, I. S. A. G. (1986). *Summary Report on the Post-Accident Review Meeting on the Chernobyl Accident*. Retrieved. from.
- Jordan, B., & Dalal, B. (2006). Persuasive Encounters: Ethnography in the Corporation. *Field Methods, 18*(4), 359-381.
- Kriegler, R. J. (1980). *Working for the company: Work and control in the Whyalla shipyard*. Melbourne: Oxford University Press.
- Leith, D. R. (2003). *An ethnographic investigation of the relevance of shop floor culture to effective safety communication in an Australian minerals refinery.*, Edith Cowan University, Perth.
- McInerney, P. (2001). *Final Report of the Special Commission of Inquiry into the Glenbrook Rail Accident*. Sydney: The Commission.
- Moray, N. (2006). *Culturing Safety for Railroads* (Committee Report Midyear 2002 No. Transportation Research Circular E-CO85). Washington: Transportation Research Board.
- National Transportation Safety Board. (1990). *Marine Accident Report: Grounding of the U.S. Tankship Exxon Valdez: on Bligh Reef, Prince William Sound, near Valdez, Alaska, March 24, 1989, Washington, D.C. NTSB. NTSB/Mar-90/04*. Washington, United States: National Transportation Safety Board
- Pidgeon, N. F. (1991). Safety culture and risk management in organizations. *Journal of Cross-Cultural Psychology, 22*(1), 129-140.
- Public Transport Authority. (2006). Transit Guards Career Information: Public Transport Authority.
- Reason, J. (1995). Understanding adverse events: Human factors. In C. Vincent (Ed.), *Clinical risk management* (pp. 31 - 53). London: BMJ Publishing Group.
- Reason, J. (1997). *Managing the Risks of Organizational Accidents* (1st ed.). Aldershot, England: Ashgate Publishing Limited.
- Rogers Commission Report. (1986). *Space Shuttle Challenger Accident* Retrieved. from <http://history.nasa.gov/rogersrep/v1ch5.htm>

- Roethlisberger, F. J., Wright, H. A. & Dickson, W. J. (1939). *Management and the worker: An account of a research program conducted by the Western Electric Company, Hawthorne works, Chicago*. Cambridge, Mass: Harvard University Press.
- Schein, E. H. (1992). *Organizational Culture and Leadership* (2nd ed.). San Francisco: Jossey-Bass.
- Spano, R. (2007). How does reactivity affect police behavior? Describing and quantifying the impact of reactivity as behavioral change in a large-scale observational study of police. *Journal of Criminal Justice*, 35(4), 453-465.
- Tope, D., Chamberlain, L. J., Crowley, M., & Hodson, R. (2005). The Benefits of Being There: Evidence from the Literature on Work. *Journal of Contemporary Ethnography*, 34(4), 470-493.
- Warren, I., & James, S. (2000). The Police Use of Force: Contexts and Constraints. In T. Coady, S. M. James & M. O'Keefe (Eds.), *Violence and Police Culture* (pp. 32 - 62). Melbourne Victoria: Melbourne University Press.
- Westrum, R. (2004). A typology of organisational cultures. *Quality Safety Health Care*, 13 (Supplement 2)(ii22-ii27), 1 - 15.
- Williamson, A. M., Feyer, A.-M., Cairns, D., & Biancotti, D. (1997). The development of a measure of safety climate: The role of safety perceptions and attitudes. *Safety Science*, 25(1-3), 15-27.
- Willis, P. (1981). *Learning to labour: How working class kids get working class jobs*. New York: Columbia University Press.
- Zohar, D. (2000). A Group-Level Model of Safety Climate: Testing the Effect of Group Climate on Microaccidents in Manufacturing Jobs. *Journal of Applied Psychology*, 83(4), 587 - 596.