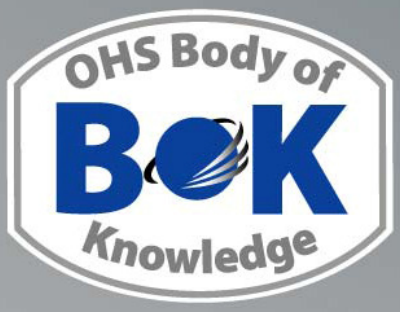

Organisational Culture

Core Body of Knowledge for the Generalist OHS Professional

Safety Institute of Australia Ltd

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Topic Specific Technical Panel and authors

The members of the Topic Specific Technical Panel and the authors were selected on the basis of their demonstrated, specialist expertise. Panel members were not remunerated; they provided input and wrote the chapter as part of their contributions to the OHS profession and to workplace health and safety.

Australian OHS Education Accreditation Board

As 'custodian' of the OHS Body of Knowledge the Australian OHS Education Accreditation Board project managed the development of the chapter.

S.I.A. Safety Institute of Australia Ltd

The Safety Institute of Australia supports the ongoing development and dissemination of the OHS Body of Knowledge through the Australian OHS Education Accreditation Board which is auspiced by the Safety Institute of Australia

Synopsis of the OHS Body Of Knowledge

Background

A defined body of knowledge is required as a basis for professional certification and for accreditation of education programs giving entry to a profession. The lack of such a body of knowledge for OHS professionals was identified in reviews of OHS legislation and OHS education in Australia. After a 2009 scoping study, WorkSafe Victoria provided funding to support a national project to develop and implement a core body of knowledge for generalist OHS professionals in Australia.

Development

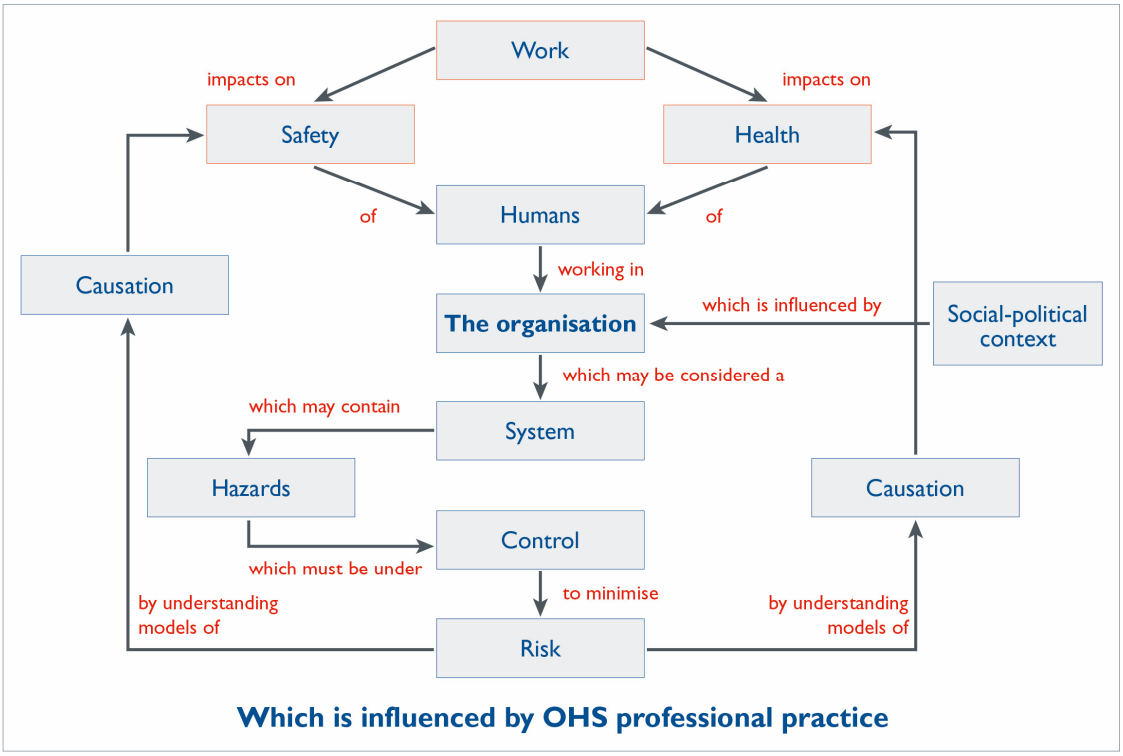
The process of developing and structuring the main content of this document was managed by a Technical Panel with representation from Victorian universities that teach OHS and from the Safety Institute of Australia, which is the main professional body for generalist OHS professionals in Australia. The Panel developed an initial conceptual framework which was then amended in accord with feedback received from OHS tertiary-level educators throughout Australia and the wider OHS profession. Specialist authors were invited to contribute chapters, which were then subjected to peer review and editing. It is anticipated that the resultant OHS Body of Knowledge will in future be regularly amended and updated as people use it and as the evidence base expands.

Conceptual structure

The OHS Body of Knowledge takes a 'conceptual' approach. As concepts are abstract, the OHS professional needs to organise the concepts into a framework in order to solve a problem. The overall framework used to structure the OHS Body of Knowledge is that:

> **Work** impacts on the **safety** and **health** of humans who work in **organisations**. Organisations are influenced by the **socio-political context**. Organisations may be considered a **system** which may contain **hazards** which must be under control to minimise **risk**. This can be achieved by understanding **models causation** for safety and for health which will result in improvement in the safety and health of people at work. The OHS professional applies **professional practice** to influence the organisation to being about this improvement.

This can be represented as:



Audience

The OHS Body of Knowledge provides a basis for accreditation of OHS professional education programs and certification of individual OHS professionals. It provides guidance for OHS educators in course development, and for OHS professionals and professional bodies in developing continuing professional development activities. Also, OHS regulators, employers and recruiters may find it useful for benchmarking OHS professional practice.

Application

Importantly, the OHS Body of Knowledge is neither a textbook nor a curriculum; rather it describes the key concepts, core theories and related evidence that should be shared by Australian generalist OHS professionals. This knowledge will be gained through a combination of education and experience.

Accessing and using the OHS Body of Knowledge for generalist OHS professionals

The OHS Body of Knowledge is published electronically. Each chapter can be downloaded separately. However users are advised to read the Introduction, which provides background to the information in individual chapters. They should also note the copyright requirements and the disclaimer before using or acting on the information.

Organisational Culture

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Core Body of Knowledge for the Generalist OHS Professional

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Core Body of Knowledge for the Generalist OHS Professional

Organisational Culture

Abstract

Since the Chernobyl nuclear disaster in 1986 there has been an explosion of academic and organisational interest in safety culture. However, the body of safety culture literature harbours unresolved debates and definitional dilemmas. As a result, safety culture remains a confusing and ambiguous concept in both the literature and in industry, where there is little evidence of a relationship between safety culture and safety performance. This chapter investigates the concept of safety culture, and finds it to have limited utility for occupational health and safety (OHS) professional practice. Informed by a literature review, interviews with key stakeholders and focus group discussions, it concludes that workplace safety may be better served by shifting from a focus on changing 'safety culture' to changing organisational and management practices that have an immediate and direct impact on risk control in the workplace. The chapter identifies characteristics of an organisation that focuses on safety, and concludes by considering the implications for OHS practice.

Keywords

organisational culture, organisational climate, safety culture, safety climate, leadership, culture change

Contents

1 Introduction

'Leadership and culture' is one of seven action areas in the *Australian Work, Health and Safety Strategy 2012-2022* (SWA, 2012). The strategic outcomes envisioned under this action area are that hazards are eliminated or risks minimised by ensuring:

> Leaders in communities and organisations promote a positive culture for health and safety
> - Communities and their leaders drive improved work health and safety
> - Organisational leaders foster a culture of consultation and collaboration which actively improves work health and safety
> - Health and safety is given priority in all work processes and decisions (SWA, 2012, p. 9).

Current thinking and discussion about organisational and safety culture spans the simplistic to the complex, with the basis for perspectives ranging from popular opinion to the advice of topic-specific writers and researchers. In 'Clarifying Culture,' a report that informed the development of the *Australian Work Health and Safety Strategy 2012-2022*, Blewett (2011) assessed 'safety culture' as a flawed and muddy construct that could be operating as a barrier to improvement on occupational health and safety(OHS), and raised many issues that are explored in this chapter. Blewett (2011, p. 20) flagged the national Work Health and Safety Strategy as an opportunity to "strategically consider 'managing culturally' rather than 'managing culture'" and identified several initiatives that could support achievement of the strategic vision for organisational culture:

- Use evidence obtained through multi-method research to form the foundation for strategies for regulators and policy makers.
- Adopt an evidence-based approach that promotes what is known about culture and dismisses supposition and conjecture.
- Remove references to "health" and/or "safety" in association with culture and leadership.
- Increase emphasis on integration of work health and safety into the business systems and processes across organisations.
- Reduce the emphasis on 'managing' culture; instead focus on controlling risks at the source.
- Differentiate between safety culture/climate and behavioural change.
- Build and develop the evidence base. Develop methods for capturing the knowledge that has arisen through experience with organisational culture as it affects health and safety, and make it available for peer review. (Blewett, 2011, p. 2)

Development of OHS strategies and the commitment of organisational resources are influenced by the organisational culture perspectives of the OHS professional, senior management and the organisation overall. Whether operating as internal or external advisors, generalist OHS professionals need to work within organisations rather than attempt to impose change from outside. This requires an understanding of the parameters, influences and drivers of culture. It also requires an understanding of how to be an agent of change within organisations to develop and support implementation of strategies to prevent and minimise workplace fatality, injury, disease and ill-health.

This chapter builds on the *OHS Body of Knowledge* chapter 10 – The Organisation – which acknowledges the complexities of organisations and the broad range of perspectives on culture. Objectives of this chapter include:

- Exploration of different perspectives on, and unresolved issues surrounding, organisational culture pertaining to OHS
- Clarification of the distinction between 'culture' and 'climate,' and exposition of semantic dilemmas that impact the construct of safety culture
- Consideration of the characteristics of an organisation with good safety culture.

This chapter is informed by a literature review with specific emphasis on *safety culture* and *safety climate*[1] within the broader realms of *organisational culture* and *organisational climate*[2] and the more expansive concept of *culture* as understood and studied by anthropologists and sociologists. To complement the literature review, semi-structured interviews were conducted with 17 informants selected by the Topic Specific Technical Panel (TSTP) to represent a range of industry sectors and four key stakeholder groups – OHS professionals (n=8), unions (n=2), employers (n=2) and OHS researchers (n=5) (Appendix A1). Interview questions, developed by the TSTP, are listed in Appendix B. Thematic analysis of interview transcripts enabled identification of common and contrasting themes. In addition, a focus group was conducted with OHS consultants (n=9, Appendix A2) who work with small-to-medium enterprises. Finally, a focus group of OHS professionals and researchers (n=10, Appendix A3) discussed the outcomes of all this chapter's evidence sources.

Discussion of aspects of the body of literature is the focus of sections 2-5, and section 6 presents the outcomes of interviews and focus group discussions. Section 7 summarises evidence from the literature and key stakeholders, which, in turn, informs a list of characteristics of an organisation that focuses on safety. The chapter concludes with consideration of the relationship between organisational culture and legislation, and a discussion of implications for OHS practice.

[1] Databases searched included Academic Search Complete, Business Source Complete, Humanities International Complete, PsycARTICLES, Psychology and Behavioral Sciences Collection, and PsycINFO. The search strings were restricted to *safety culture AND industrial* and *safety climate AND industrial*, and publication selection was guided by the objective to explore different perspectives and by the extent of referral in peer-reviewed literature.

[2] For a succinct review of the evolution of the concepts of organisational culture and organisational climate, see for example Blewett (2011). For a recent in-depth exploration of the organisational culture/climate intersection, see Schneider and Barbera (2014).

2. Historical context

2.1 Evolution of the concepts of *safety culture* and *safety climate*

The 1986 Chernobyl nuclear disaster proved a catalyst for usage of the term 'safety culture,' which, subsequently, was cited in investigation reports of, for example, the 1988 Piper Alpha oil and gas platform disaster in the North Sea and the 1988 Clapham Junction rail disaster near London (e.g. Antonsen, 2009a; Cox & Flin, 1998; Pidgeon, 1998; Zhang, Wiegmann, von Thaden, Sharma & Mitchell, 2002). The impact of organisational culture on safety was implicated in the *Challenger* and *Columbia* space shuttle disasters in 1986 and 1988, respectively (Antonsen, 2009a), and in the Glenbrook train crash near Sydney in 1999 (Hopkins, 2005). Also, safety culture was identified as a significant contributing factor in the BP Texas City disaster in the United States in 2005 (Baker et al., 2007; CSB, 2007). Not surprisingly, these major disasters have attracted much attention in the scientific literature on safety culture.

A decade before the Chernobyl disaster, Turner investigated the chain of events leading to disasters and described an "incubation stage" during which failures of foresight occur (see Turner, 1976; Turner & Pidgeon, 1997). Turner's 1978 *man-made disasters model*, which conceptualised the relationship between organisational safety and cultural processes, included six phases: normal situation, incubation period, trigger event, emerging crisis, rescue and crisis management, and cultural readjustment (Antonsen, 2009a).

While the concept of safety culture was introduced to explain failures in high-risk socio-technical systems (nuclear power generation, space travel, railways), the term 'safety climate' already was being used in reference to the organisational climate for safety and its impact on worker behaviour in industrial organisations. In a seminal safety climate study conducted in Israel, employees in 20 industrial organisations were surveyed to determine their perceptions of "the relative importance of safe conduct in their occupational behaviour" (Zohar, 1980, p. 96).

The concepts of safety culture and safety climate have continued to evolve, often along different pathways, to the point where it is taken for granted that safety culture and, possibly to a lesser extent, safety climate constitute both the problem and the solution to modern day organisational safety woes (see section 4).

2.2 Safety culture in the literature

Silbey (2009) documented an explosion of interest in safety culture in popular and academic literature during 2000-2007, locating four times the number of relevant publications in this eight-year period than in the previous decade. It appears that interest in the concept has

continued to increase dramatically; the literature review undertaken for this chapter revealed an annual average of 638 relevant publications for the six years from 2008 to 2014.[3]

Investigation of the extent of academic interest in reframing safety culture as an aspect of the wider organisational culture (see for example Blewett, 2011) revealed a seven-fold increase in the use of the term 'culture of safety' between 2008 and 2014 compared with the period 2000 to 2007.[4] This may indicate a level of agreement that safety culture is best understood as a subset of the wider organisational culture (Antonsen, 2009a; Clarke, 1999; Cooper, 2000; Cox & Flin, 1998; Glendon & Stanton, 2000; Hale, 2000; Hopkins, 2005) and lends support to the argument that it might be timely to talk about an organisational culture focused on safety, rather than safety culture *per se*.

Many academics have attempted to clarify the constructs of safety culture and safety climate and to resolve definitional dilemmas (see section 3). In terms of reviews and meta-analyses, there exist at least seven focused on safety culture (Choudhry, Fang & Mohamed, 2007; Edwards, Davey & Armstrong, 2013; Glendon, 2008; Guldenmund, 2000, Silbey, 2009; Sorenson, 2002; Zhang et al., 2002) and at least five on safety climate (Beus, Payne, Bergman & Arthur, 2010; Christian, Bradley, Wallace & Burke, 2009; Clarke, 2006; Johnson, 2007; Nahrgang, Morgeson & Hofmann, 2011). Interestingly, six of those focused on safety culture debate the distinction between safety culture and safety climate; three of those focused on safety climate mention safety culture, but mainly in relation to their literature search rather than as a point of debate. Those writing about safety climate tend to publish in non-safety-specific journals, such as the *Journal of Applied Psychology*.

As an introduction to the literature of safety culture, Guldenmund's (2000) review is discussed briefly below.

2.2.1 Guldenmund's (2000) review

Guldenmund reviewed two decades of safety culture and safety climate literature (1980-2000) and found it to be characterised by lack of consensus and a dearth of models explaining "the relationship of both concepts with safety and risk management or with safety performance" (p. 215). He distilled seven characteristics of organisational culture (and climate):

1. It is a *construct*…[that is] an abstract concept rather than a concrete phenomenon…
2. It is relatively *stable*…
3. It has *multiple dimensionality*…
4. It is something that is *shared* by (groups of) people…

[3] The search string of *safety culture AND industrial* returned 2,735 publications, an average of 456 per year, and the search string *safety climate AND industrial* returned 1,095 publications, an average of 182 per year.
[4] Using the search string *culture of safety AND industrial*

5. It consists of *various aspects*; this means that several, different cultures or climates can be distinguished within an organisation…
6. It constitutes *practices*…[layers of] rituals, heroes and symbols [that] are more easily changed than norms and values…This characteristic also implies that culture is *learned…*
7. It is *functional*…in the sense that it supplies a frame of reference for behaviour…"The way we do things around here" effectively captures this functional aspect (pp. 222-225).

Guldenmund defined safety culture as "those aspects of the organisational culture which will impact on attitudes and behaviour related to increasing or decreasing risk" (p. 251), and proposed an integrative framework (Table 1) for conceptualising safety culture/climate based on the three levels of organisational culture (i.e. basic assumptions, espoused values and artefacts) that had been described by Schein in 1992. Guldenmund explained:

> The core is assumed to consist of basic assumptions, which are unconscious and relatively unspecific and which permeate the whole of the organisation. The next layer consists of espoused values, which are operationalised as attitudes. Attitudes have specific objects and therefore this layer is, necessarily, specific with regard to the object of study. For safety culture four categories of object are suggested; hardware, software, people and behaviour. Finally, the outermost layer consists of particular manifestations… (pp. 251-252)

Table 1: Levels of culture, their visibility and examples (Guldenmund, 2000, p. 251)

Levels of culture	**Visibility**	**Examples**
1. Outer layer – artefacts	Visible, but hard to comprehend in terms of underlying culture	Statements, meetings, inspection reports, dress codes, personal protective equipment, posters, bulletins
2. Middle layer – espoused values/attitudes regarding: • hardware • software • people/liveware • risks	Relatively explicit and conscious	Attitudes, policies, training manuals, procedures, formal statements, bulletins, accident and incident reports, job descriptions, minutes of meetings
3. Core – basic assumptions regarding: • the nature of time • the nature of space • the nature of human nature • the nature of human activity • the nature of human relationships	Mainly implicit: obvious for the members, invisible, pre-conscious	Have to be deduced from artefacts and espoused values as well as through observation

It was Guldenmund's contention that safety culture, like organisational culture as conceptualised by Schein (1992), could be studied at these three levels, with safety climate equated with attitudes at the level of espoused values.

3. Definitional dilemmas

Silbey (2009) observed that "culture is an actively contested concept" and drew attention to the "bewildering mix of concepts and measures" that had resulted from parallel development of the constructs of organisational and safety culture and organisational and safety climate (pp. 350). This is evident in the vast number and diversity of definitions of safety culture to be found in the literature. According to Dejoy (2005, p. 115), "current definitions of safety culture remain rather vague and variable," and others have commented on the lack of agreement on how safety culture should be defined (e.g. Reason, 1998; Fernández-Muñiz, Montes-Peón & Vázquez-Ordás, 2007). Pidgeon (1998, p. 204) advocated the avoidance of "definitional arguments [because] of their capacity to create heat without light."

An evolving line of argument favours replacing the concept of *safety culture* with *organisational culture* or more precisely with *an organisational culture focused on safety*. For example, Hale (2000, p. 5) argued that "we should in future only talk about (organisational) *cultural influences on safety* and not *safety culture*." It has been asserted that "culture is a property of a group not a concept [and consequently] 'safety culture' should not have academic conceptual status" (Schein as cited in Reiman & Rollenhagen, 2014, p. 3). Similarly, Antonsen (2009a, p. 24) argued there is "no such 'thing' as a safety culture," preferring to place the broader concept of culture central to the discussion of organisations and safety. Others have suggested that safety culture may be "little more than a catchy title for safety management" (Edwards et al., 2103, p. 79) and Rollenhagen (2010) argued that a focus on safety culture might hamper identification of safety problems that require engineering solutions.

Hale (2000) identified value in approaching the problem of safety culture definition from the vantage point of what it is *not*, and by considering contrasting "parallel concepts" such as *management structure* that work with culture. Also, Myers, Nyce and Dekker (2014) stressed the importance of separating culture from what it is *not*, that is, distinguishing culture from the "concrete behaviours, social relations and other properties of workplaces (e.g. organiszational structures) and of society itself" (Myers et al., 2014, p. 25). For Antonsen (2009a), organisational culture relates to the informal aspects of organisations, while the formal or structural aspects fall outside the concept of culture; this may be one way of clarifying what culture is *not*.

With these definitional issues in mind, a small number of commonly cited definitions of *safety culture*, *safety climate* and *organisational culture* are presented below.[5]

3.1 Safety culture

Two commonly cited definitions of *safety culture* are those proposed by the International Atomic Energy Agency (IAEA, 1991) via the International Nuclear Safety Advisory Group (INSAG) and the UK Health & Safety Commission (HSC, 1993) via the Advisory Committee on Safety in Nuclear Installations (ACSNI):

> Safety culture is that assembly of characteristics and attitudes in organizations and individuals which establishes that, as an overriding priority, nuclear plant safety issues receive the attention warranted by their significance. (IAEA, 1991, p. 1)
>
> 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. (HSC, 1993, p. 23)

Critics of the IAEA definition have referred to it as a "'motherhood' statement specifying an ideal but not the means to achieve it" (Reason, 1997, p. 194) and as suggestive that only organisations "for which safety is an overriding priority" have a safety culture (Hopkins, 2005, p. 11). Hopkins (2005) emphasised that all organisations have a safety culture regardless of its effectiveness, and preferred the term "culture of safety" (p. 12). Reason (1997) identified the HSC definition as more useful, but stressed the importance of an effective safety information system as part of an informed culture.

3.2 Safety climate

In 2003, Zohar defined *safety climate* as "the perception of the policies, practices, and procedures pertaining to safety" (as cited in Beus et al., 2010, p. 727). However, there is long-standing debate (e.g. Choudhry et al., 2007; Clarke, 2000; Cox & Flin, 1998; Edwards et al., 2013; Flin, Mearns, O'Connor & Bryden, 2000) as to whether safety culture and safety climate are the same or separate concepts. While there is evidence that the concepts have been used interchangeably (e.g. Beus et al., 2010; Gadd & Collins, 2002; Hale, 2000; Hopkins, 2005; Zhang et al., 2002), Antonsen (2009a) asserted a conceptual difference between safety culture and safety climate with culture a higher-level, abstract and more stable concept, and climate more transient and easier to change. Similarly, Cox and Flin (1998) characterised culture as the 'personality' of the organisation and climate as the 'mood' at any

[5] For influential definitions of the more expansive concept of *culture*, see for example Coffey (2010).

particular point in time, and Schein (1990) saw climate as "only a surface manifestation of culture." In his review of two decades of safety culture/climate literature, Guldenmund (2000, 2010) observed gradual replacement of the concept of climate with the broader and more profound concept of culture.

3.3 Organisational culture

Arguably the most widely known definition of *organisational culture* is Bower's 1966 behaviour-based philosophy of "the way we do things around here" as applied by Deal and Kennedy (1982, p. 4). Also popular is Uttal's 1983 definition: "Shared values (what is important) and beliefs (how things work) that interact with an organization's structures and control systems to produce behavioural norms (the way we do things around here)" (as cited in Reason, 1997, p. 192). The direct link of culture with behaviour has been identified as problematic. Myers et al. (2014, p. 25) view "the way we do things around here" as an oversimplification that "risks leading researchers astray, i.e. away from perhaps a more informed analysis of just what they wish to study and understand."

Frequently cited in more recent literature is Schein's (2010, p. 18) definition of *organisational culture* as:

> …a pattern of shared basic assumptions learned by a group as it solved its problems of external adaptation and internal integration, which has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems.

However, Blewett (2011, p. 5) questioned the relevance to contemporary organisations of Schein's definition, which appears to view organisational culture as "something that is unitary, agreed, and relatively static [and that] develops over time in a stable organisation and can be passed on to newcomers."

4. Safety culture as the problem and the solution

Following the identification of safety culture as a problem facing high-risk socio-technical systems in the 1980s, organisational and worker errors, violations and unsafe practices could be viewed as evidence of a poor safety culture (Guldenmund, 2010; Pidgeon, 1998). With safety culture cast as the problem, the assumption was that organisations implicated in major disasters must have had a 'bad' safety culture and, conversely, that a 'good' safety culture would prevent not only disasters but also smaller-scale accidents associated with routine tasks (Cooper, 2000). This set in motion the search for the elements or characteristics of a 'positive safety culture;' the solution to the problem lay in finding "it" (Pidgeon, 1998, p. 203), "a philosopher's stone to cure all ills" (Cox & Flin, 1998, p. 189). However, this assumption has

been challenged (Cox & Flin, 1998). Recently, Reiman and Rollenhagen (2014, p. 97) argued "To blame an organisation for having a weak safety culture has become almost the equivalent easy response to system problems as was blaming individuals for human errors a few decades ago." According to Silbey (2009, p. 343), "Invoking culture as both the explanation and remedy for technological disasters obscures the different interests and power relations enacted in complex organizations." With these cautions in mind, four attempts to capture the characteristics of a good safety culture are presented below, followed by a framework for thinking culturally about management and organisations that also could be used to inform efforts to improve work health and safety.

4.1 Identifying a 'positive safety culture'

- UK Health & Safety Commission (HSC) Advisory Committee on the Safety of Nuclear Installations (ACSNI) (HSC, 1993): *Organising for safety*

  This study of organisational factors that improve safety performance in the nuclear industry considered the role and measurement of safety culture. It adopted the idea and language of a 'positive safety culture,' citing themes common to good organisational management of health and safety as identified in a 1990 Confederation of British Industry (CBI) report:

  1. The crucial importance of leadership and the commitment of the chief executive
  2. The executive safety role of line management
  3. Involvement of all employees
  4. Openness of communication
  5. Demonstration of care and concern for all those affected by the business (CBI as cited in HSC, 1993, pp. 23-24).

  The HSC report identified safety culture as a subset of, or at least influenced by, the culture of the organisation. With reference to studies undertaken in the US nuclear industry between 1989 and 1992, the report cited four critical indicators of safety performance:

  1. Effective communication, leading to commonly understood goals, and means to achieve the goals, at all levels of the organisation;
  2. Good organisational learning, where organisations are tuned to identify and respond to incremental change;
  3. Organisational focus, simply the attention devoted by the organisation to workplace safety and health;
  4. External factors, including the financial health of the parent organisation, or simply the economic climate within which the company is working, and the impact of regulatory bodies (p. 24).

  The HSC report recommended "an evolutionary approach to the improvement of safety culture" (HSC, 1993, p. 24).

- Pidgeon's "good safety culture"

  In 1991, Pidgeon characterised a good safety culture under the categories of *"norms and rules* for handling hazards, *attitudes* toward safety, and *reflexivity* on safety practice" (Pidgeon, 1991, p. 135), and subsequently developed this characterisation over several publications. In 1994, informed by the HSC report, Turner's man-made disasters model and high reliability organisation theory, Pidgeon and O'Leary emphasised organisational learning as central to an integrated safety management system, and included it as one of four facets that both reflect and promote a good safety culture:

  - *senior management commitment* to safety;
  - *shared care and concern* for hazards and a *solicitud*e over their impacts upon people;
  - realistic and flexible *norms and rules* about hazards; and
  - continual *reflection upon practice* through monitoring, analysis and feedback systems (organizational learning) (as cited in Pidgeon & O'Leary, 2000, p. 18).

  It was established that a good safety culture necessitated overcoming common barriers. Predating Silbey's (2009) concern regarding the potentially negative impact of power relations on culture and safety, Pidgeon (1998) warned that politics and power may become a barrier to organisational goals designed to implement the four aspects of a good safety culture, particularly organisational learning. Pidgeon and O'Leary (2000) maintained that addressing the interplay of organisational power, politics and blame requires a monitoring and reporting system built on trust.

  To overcome an informational barrier to organisational learning, Pidgeon and O'Leary (2000) suggested exercising *safety imagination* – "a critical and reflective process, in that one seeks to challenge the default assumptions about the world and its hazards, and then to use this interrogation to interpret the significance of external warning signs and events" (Pidgeon & O'Leary, 2000, p. 22). Designed to counter the incubation of disasters and allow information about hazards to surface, safety imagination "is based on the principle that our understanding and analysis of events should not become overly fixed within prescribed patterns of thinking" (Pidgeon & O'Leary, 2000, p. 22). A list of US firefighter-training-program procedures was presented as an appropriate guide for fostering safety imagination:

  - Attempt to fear the worst
  - Use good meeting management techniques to elicit varied viewpoints
  - Play the 'what if' game with potential hazards
  - Allow no worst case situation to go unmentioned
  - Suspend assumptions about how the safety task was completed in the past
  - Approaching the edge of a safety issue with a tolerance of ambiguity will be required, as newly emerging safety issues will never be clear

- Force yourself to visualise 'near-miss' situations developing into accidents (Thomas as cited in Pidgeon & O'Leary, 2000, p. 23).

- Hale's (2000) "elements for a good culture for safety"
  In a *Safety Science* editorial titled 'Culture's confusions,' Hale (2000) offered the following list of eight "elements for a good culture for safety:"

  - The importance which is given by all employees, but particularly top managers to safety as goal, alongside and in unavoidable conflict with other organisational goals; e.g. whether actions favouring safety are sanctioned and rewarded even if they cost time, money or other scarce resources.
  - Which aspects of safety in the broadest sense of the word are included in that concept, and how the priority is given to, and felt between the different aspects.
  - The involvement felt by all parties in the organisation in the process of defining, prioritising and controlling risk; the sense of shared purpose in safety.
  - The creative mistrust which people have in the risk control system, which means that they are always expecting new problems, or old ones in new guises and are never convinced that the safety culture or performance is ideal. If you think you have a perfect safety culture, that proves that you have not. This means that there must be explicit provision for whistleblowers. A role for health and safety staff in very good organisations may be as a professional group constantly questioning and seeking the weak points in the prevailing culture.
  - The caring trust which all parties have in each other, that each will do their own part, but that each (including yourself) needs a watchful eye and helping hand to cope with the inevitable slips and blunders which can always be made. This leads to overlapping and shared responsibility.
  - The openness in communication to talk about failures as learning experiences and to imagine and share new dangers, which leads to the reflexivity about the working of the whole risk control system. If coupled with a willingness only to blame in the case of unusual thoughtlessness or recklessness, this can drive a responsible learning culture.
  - The belief that causes for incidents and opportunities for safety improvements should be sought not just in individual behaviour, but in the interaction of many causal factors. Hence the belief that solutions and safety improvement can be sought in many places and be expected from many people.
  - The integration of safety thinking and action into all aspects of work practice, so that it is seen as an inseparable, but explicit part of the organisation (pp. 12-13)

- UK Health & Safety Executive (HSE, 2005): *A review of safety culture and safety climate literature for the development of the safety culture inspection toolkit*
  Acting on recommendations from inquiries into British rail disasters at Southall and Ladbroke Grove, the HSE initiated development of a safety culture inspection toolkit informed by five indicators known to influence safety culture:

  - Leadership
  - Two-way communication
  - *Employee involvement*
  - Learning culture
  - Attitude towards blame (HSE, 2005, p. iv).

4.2 Framework for a cultural understanding of organisations

The four approaches to positive safety culture discussed above may be viewed through a lens designed to inspire "cultural thinking" in organisations (Alvesson, 2013). As part of his framework for thinking culturally about management and organisations, Alvesson (2013) offers eight tips that hold relevance for OHS:

1. …Understanding and managing/influencing culture in complex organizations call for serious deciphering and unpacking work. Try to go deeper than vague value statements…and *grasp the more precise meanings of acts, objects, words and rituals.*
2. Culture is a metaphor for organization. As such it is broad and vague and needs to be supplemented with more specific views, e.g. second-order metaphors, like organizational culture as Holy Grail, compass or mental prison. *Pick and use – or develop yourself – some metaphors that are generative, and which stimulate your imagination and seem to have value for the specific organizational context…*
3. *…Try to see culture when you do not expect it. Include what others may see as outside (correlations of) culture as part of what cultural perspective can illuminate.*
4. Culture both guides and integrates us *and* constrains *and* blinds us into a taken-for-granted set of ideas and understanding. See culture as a regulative framework with *both helpful and obstructive elements.*
5. …Cultural meanings do not develop freely or spontaneously, but bear the imprints of ideologies and actions of powerful agents…[H]ow social reality is shaped in specific situations is partly an outcome of the values and meanings that are invoked by actors reflecting sectional interests. Consider the *power element in the creation and reproduction of shared meanings.*
6. Culture is not static and uniform but dynamic and thus ambiguous and messy…Think of cultures in the plural in most organisations, and, depending on the issue, situation and group involved, recognize how *different constellations of webs of meaning become salient.*
7. The multiplicity of not only groups and situations but also cultural meanings as residing and constructed both in local interaction and in broader historical and societal traditions needs to be taken into account. *Consider local production as well as macro-level imprints,* and the micro-macro interplays, on cultures in organizations.
8. Culture is best understood in relation to social practice…The cultural aspect should be related to *specific events, situations, actions and processes…* (Alvesson, 2013, p. 204)

5 Reflecting on the literature

Frequently debated in the organisational and safety culture literature are questions concerning whether culture can be managed, changed and measured, and whether it can improve performance.

5.1 Four questions from the safety culture debates

5.1.1 Can culture be managed?

The extent to which organisational culture can be managed has been hotly debated. Particularly influential in this debate has been Smircich's (1983) distinction between studies

of culture as something an organisation *has* (a variable) or as something an organisation *is* (a metaphor) (e.g. Glendon & Stanton, 2000; Hale, 2000; Reason, 1997). The culture-as-variable (functionalist) perspective focuses on causality and contends that culture is something that can be managed or at least influenced by leaders and managers, while the culture-as-metaphor (interpretative) perspective approaches the organisation as a socially shared experience (Alvesson, 2013).

From the interpretive vantage point, Martin (2002) advocated a three-perspective approach to studying organisational culture: integration, differentiation and fragmentation; the latter more recently referred to as ambiguity. After applying Martin's three perspectives to an ethnographic study of the Danish manufacturing industry, Richter and Koch (2004) concluded:

> …safety culture should be understood in a specific context, and that culture may change, as the material conditions and the social relations develop…[T]he three perspectives of integration, differentiation and ambiguity, supplemented with the notion of multiple configuration, are useful tools, when pursuing to understand the complex social reality, which shapes safety cultures in companies of modern society (Richter & Koch, 2004, p. 720).

Various resolutions to the *has* or *is* organisational culture debate have been suggested. For example, Alvesson (2013) proposed the concept of *bounded ambiguity* – while people in an organisation may not share a single view of the organisation's culture, there is sufficient guidance offered by the organisational culture for "coping with instances of ambiguity without too much anarchy or confusion" (p. 147).

A more pragmatic stance was taken by Reason (1997), who argued that safety culture is an *informed culture* in which managers and workers know how the human, technical and organisational factors combine and contribute to system safety, and as such it can be socially engineered (Reason, 1997). In other words, organisational members need to know where the 'edge' of safety is without having to fall over it (Reason & Hobbs, 2003). Reason (1997) drew on the work of organisational anthropologist Hofstede, who researched national and organisational cultures. Hofstede (1991) found that, at the national level, values learnt early in life distinguished different cultures; at the organisational level, practices learnt in the workplace distinguished different cultures and these practices could be influenced by organisational structures and systems. For Hofstede this resolved the *has* or *is* debate*:*

> [W]e propose that practices are features an organization *has*. Because of the important role of practices in organizational cultures, the latter can be considered *somewhat* manageable. Changing collective values of adult people in an intended direction is extremely difficult, if not impossible. Values do change, but not according to someone's master plan. Collective practices, however depend on organizational characteristics like structures and systems, and can be influenced in more or less predictable ways by changing these. (Hofstede, 1991, p.199)

Reason's (1997) 'engineerable' informed safety culture comprises four interlocking subcultures, or structures and systems designed to impact upon collective practices: a reporting culture, a just culture, a flexible culture and a learning culture:

- Reporting culture
  To foster an informed culture, managers must create an atmosphere of trust that encourages workers to report errors, near-misses and hazards. Workers must feel 'safe' to report, which means being free from fear of punishment or retribution.
- Just culture
  A just culture clearly distinguishes between acceptable and unacceptable behaviour or blame-free (unintentional) and culpable (intentional) acts (Reason & Hobbs, 2003). Organisations must clearly articulate the behaviours that are important for achieving safety, and deal consistently and firmly with intentional violations.
- Flexible culture
  A flexible culture requires managers to allow decision making to be moved down and around an organisation based on need or the problem to be solved in the moment. This requirement for a culture of adaptability was identified in studies of high-reliability organisations where adapting to changing demands was found to be a defining characteristic.
- Learning culture
  The information gained through the reporting subculture can be used for organisational learning and systemic reform. According to Reason and Hobbs (2003), the type of learning required is 'double-loop learning.' Double-loop learning challenges underlying assumptions, that is, people's 'mental models' about safety that guide their actions, and leads to "global reforms rather than local repairs, and to the adoption of a 'system model' of human error" (Reason & Hobbs, 2003, p. 154).

5.1.2 Can culture be changed?

Because culture is a group rather than an individual phenomenon, organisations may encompass subcultures (Hopkins, 2005). The idea of culture change raises the question of whether change efforts should focus on the values of the group(s) or on group practices. Drawing on the work of Hofstede and Reason, Hopkins (2005) argued that a singular focus on changing values is likely to be ineffective. Rather, the focus should be on changing collective practices of the organisation and changes in values will follow through the process of *cognitive dissonance*, that is, as a result of the tension felt by people "when their behaviour is out of alignment with their values" (Hopkins, 2005).

From a constructivist perspective, Antonsen (2009a) was sceptical about 'recipes' for culture change, and instead espoused a *cultural approach* in which change processes: 1) focus on

changing practices 2) have moderate goals that relate to everyday realities; 3) accept that there are no quick fixes; 4) combine aspects of 'push' and 'pull;' 5) are sensitive to organisational symbolism; 6) are sensitive to what makes sense locally; 7) aim for creation of a common language rather than organisation-wide consensus; and 8) consider the need for change and set realistic goals. Antonsen (2009a) conceded that it could be easier to change climate than culture. Recently, Zohar and Polachek (2014) used discourse analysis and role theory to improve communications between supervisors and workers, and found that changes in supervisor messages influenced safety climate and safety behaviour; this appears supportive of Antonsen's view of culture as a social process created through day-to-day interaction.

5.1.3 Can culture be measured?

Developed for the oil and gas industry by Westrum and Hudson, the *culture ladder* (also referred to as the *evolutionary* or *maturity model*) is a popular method of assessing organisational culture (see Hudson, 2003; Lawrie, Parker & Hudson, 2006; Parker, Lawrie & Hudson, 2006). The model comprises five levels that are increasingly informed and characterised by increased trust:

- Pathological: who cares as long as we're not caught
- Reactive: safety is important, we do a lot every time we have an accident
- Calculative: we have systems in place to manage all hazards
- Proactive: we work on the problems that we still find
- Generative: safety is how we do business round here. (Hudson, 2001, p. 21)

Many safety climate researchers, often from the field of psychology, have conducted questionnaire-based studies and wrestled with the task of identifying dimensions of safety climate that represent valid and reliable indicators of safety behaviour and safety performance. Not all researchers agree that safety climate or safety culture can be measured via a questionnaire (e.g. Schein, 2009). On the basis of a study of the Snorre Alpha incident in the North Sea where a survey had returned favourable results not long before the incident, Antonsen (2009b) argued that safety culture surveys have little predictive value. Post-incident investigations, involving interviews with a large number of workers and managers revealed a different picture of safety on the rig prior to the incident compared to the one captured by the survey, prompting the observation that "The goal of safety culture assessments should be to provide valid descriptions of social processes, and to understand why some courses of action stand out as meaningful to the actors involved" (Antonsen, 2009b, p. 252). While not suggesting the abolition of safety culture surveys, Antonsen (2009b) advocated that they take account of the specific context of practices. Similarly, Hopkins (2006) suggested that surveys be extended to take account of practices.

Nevertheless, in a meta-analysis of safety climate research, Flin et al. (2000) identified five dimensions of safety climate: 1) management, 2) safety system, 3) risk, 4) work pressure, and 5) competence. Guldenmund (2007, p. 738) concluded that "Analyses provide many different factors that are hard to replicate [and] [m]ost analyses produce one or several higher management related or organisational factors that account for most of the variance in the data." He recommended applying nine safety management processes at the individual, group and organisational levels to develop questions to gain an insight into the organisational culture for safety. The nine processes, adapted from a structure developed from the results of safety management auditing research at Delft University of Technology, are: 1) risks, 2) hardware design and layout, 3) maintenance, 4) procedures, 5) manpower planning, 6) competence, 7) commitment, 8) communication, and 9) monitoring and change.

Kines et al. (2011, p. 634) validated the Nordic Safety Climate Questionnaire (NOSACQ-50) that:

> …consists of 50 items across seven dimensions, i.e. shared perceptions of: 1) management safety priority, commitment and competence; 2) management safety empowerment; and 3) management safety justice; as well as shared perceptions of 4) workers' safety commitment; 5) workers' safety priority and risk non-acceptance; 6) safety communication, learning, and trust in co-workers' safety competence; and 7) workers' trust in the efficacy of safety systems.

Hale (2000, p. 11) took a more pragmatic approach to measurement of culture: "it may not matter what the technique is that is used to make safety culture discussible. The main objective is to bring the basic assumptions sufficiently close to the surface that they can be examined and worked on."

5.1.4 Does a good culture improve performance?

There is consensus among *safety climate* researchers that good safety climate, through its influence on safety behaviour, reduces injuries. Zohar and Polachek (2014, p. 1) concluded that "its effect on safety performance and objective injury data equals or surpasses all other known safety risk indicators, including unguarded physical hazards at the workplace."

Outcomes of *safety culture* research are less clear. A study designed to evaluate successful and unsuccessful safety management and culture interventions provided a modicum of clarity; most successful were "interventions bringing about constructive dialogue between shop-floor and line management, providing motivation to line managers and strengthening the monitoring and learning loops in the safety management system" (Hale, Guldenmund, van Loenhout & Oh, 2010, p. 1). The "motor" driving this success was the amount of energy devoted by either a senior manager or the safety professional; when neither party drove the intervention, the company was five times more likely to be unsuccessful (Hale et al., 2010).

This implies that senior management and OHS professionals have influential roles in cultural change. While the leadership impact on culture is well recognised (Schein, 2010), there has been less emphasis on the role of the OHS professional.

5.2 General uncertainty in the literature

> *Attempting to make sense of the safety culture literature is analogous to a "theatre of culture" in which the actors on stage (managers, supervisors, and workers) are doing their best with a flimsy script. Meanwhile, huddled in the wings are the scriptwriters (researchers representing a range of academic disciplines), who monitor the action to get a sense of how the play is progressing and who, between scenes, pass script-revision notes to the stage hand (OHS professional) who, in turn, passes them to the actors who read them with bemusement. This may seem like a rather cynical rendering of the literature; however, after three decades of research and practice, we seem to be little closer to providing clarity and direction for the actors on stage, who have long accepted responsibly for writing their own scripts, drawing only occasionally on input from the scriptwriters.*

After close to 30 years, the body of safety culture literature is plagued by unresolved debates, and definitional and modelling issues. As a result, safety culture is a confusing and ambiguous concept, and there is little evidence of a direct relationship between it and safety performance. Amalberti (2013, p. 99) observed "huge variability in the way the concept of the safety culture is used in the literature and the meanings that are given to it" and that safety culture "is rarely a concept that permits direct, primary action to improve safety." Consequently, the utility of the term safety culture, and changing safety culture as a focus for improving safety in the workplace, must be called into question.

Although safety climate researchers have found evidence of a relationship between safety climate scores and safety performance, the concept of safety climate also is not immune to controversy. The relationship between safety climate and safety culture continues to be debated with safety climate generally considered a measure of the deeper safety culture. Agreement is lacking among proponents of the various safety climate questionnaires in terms of appropriate indicators of safety climate.

Also unresolved is the relationship between safety culture and safety climate and the interplay of these with the broader concepts of organisational culture and organisational climate.

This uncertainty in the literature creates a challenge for organisations wishing to improve their safety performance through safety culture improvements. It increases the likelihood that organisations will bypass the safety science literature and look instead to what other organisations are doing or be swayed by popular safety culture change programs. To explore the relevant concepts further, interviews were conducted with researchers and professionals in the field.

6 Opinions of key stakeholders

The 'safety culture' views of key stakeholders were explored in interviews with OHS professionals, union representatives, employer representatives and researchers (Appendix A1) Emergent themes are discussed in the following sections, which draw on the opinions of informants as documented in Appendices C-M. In addition, because much of the literature on safety culture refers to or is based on the experience of large, often high-risk organisations, a focus group was conducted with OHS professionals who provide consulting services to small and medium enterprises (SMEs) (Appendix A2).Finally, a workshop was conducted with OHS professionals and researchers (Appendix A3) to critically reflect on the outcomes of the literature review, interviews and focus groups.

Overall, the outcomes of the interviews and discussions supported the literature review finding that safety culture is an ambiguous and confusing concept, and added weight to the argument that the utility of the term safety culture, and changing safety culture as a focus for improving safety in the workplace, must be called into question. Despite conflicting views among researchers, among professionals and between the researcher and professional groups, there emerged a consensus supportive of a shift in focus and language to changing organisational and management practices rather than persevering with the term safety culture and attempting to change safety culture as a means for improving safety performance. This shift in focus retains the importance of understanding the organisational culture as a prerequisite for implementing changes to organisational and management practices designed to improve workplace safety.

6.1 Views of researchers

Views articulated by the safety culture and safety climate researchers interviewed are distilled in Table 2.

Table 2: Researcher views on safety culture

Researcher	Expressed views
Prof. Andrew Hopkins	Culture is a characteristic of a group, not an individual. An individual has a belief, for example, that is not an aspect of the individual's culture unless that belief is shared. Culture is not an individual phenomenon, it's a collective phenomenon. As soon as you move beyond the individual you are getting to the notion of culture. Until we focus on organisational practices and changing those, we're not going to do anything about an organisational culture. We certainly can't change the organisational culture by focusing on the individual; it's the organisation's practices that are crucial. If you take organisational culture as the primary term, then safety culture is simply an organisational culture that prioritises safety. [defining safety culture] One is the way we do things around here, so that's collective practices. And the other is the mindset; it's the way we think around here, if you like. So we have those two different ways of focusing on the notion of culture. It is important to recognise that those two approaches are complementary, not contradictory. It's much easier to observe people's practices than it is to know what's inside their head. From a point of view of researching or studying what the culture of the organisation is, it's simpler to start with practices. Treating the concept of culture as descriptive – this is the way things are done here – and then asking why they are done in this way is a very productive way to think about culture and a very productive line of enquiry. It gets at what I would want to call the root causes; while there are no such things as root causes, if we can accept that as a kind of a metaphor, then yes, this line of enquiry gets at much more fundamental causes, root causes, than any other line of enquiry. It's not just about leaders saying safety is important around here. It's about Edgar Schein's assertion that leaders create cultures by what they systematically pay attention to. This can be anything from what they notice and comment on to what they measure, control, reward and in other ways systematically deal with. I'm often asked how rapidly a leader can change a culture; does it take one year, three years or five years? My answer to that is as soon as the leaders start behaving differently the culture will start to change. People are very responsive to messages from the leadership.
Prof. Andrew Hale	Safety culture is a group phenomenon; it can't exist unless there is an interactive group. I see safety culture as an aspect of organisational culture. It's a bit like the relationship between safety management and management; it's an aspect, not a separate element. I prefer a definition of safety culture that makes it clear it is the aspect of organisational culture that impacts on safety. The safety management system is the structure and functions, and the safety culture is why it works or doesn't work in favour of safety. I'm not somebody who believes that culture is unchangeable or unchangeable except in the long term. There is plenty of case study evidence for culture changing quite dramatically even over periods of only six months to a year. If you work hard enough and you've got somebody driving it from the top then within a year you can make dramatic changes. I think leadership is critical, but it can be a little bit more distributed than sometimes people write about. Sometimes you read it as though it's only the CEO who can determine that, and if the CEO is not 150% behind it then it won't work. In the intervention studies I did in Holland, the good companies had either a really active CEO or a really active safety manager or both. A dilemma is that we still don't have a vast amount of evidence linking safety culture to safety performance so we still have problems deciding what is good in the safety culture and in interpreting the safety climate surveys.
Prof. Patrick Hudson	Safety culture is a relevant concept; you can smell it. Safety culture is part of the organisational culture, but it's only a part. I think that to obsess about safety issues is to fail to understand the context of the wider organisational culture. It's not just how we do things around here, but how things should be done.

	You can try and change the culture from the bottom, but that really doesn't work. I typically work with the Executive Committee or as high as possible; it's important to have the CEO agree that things have got to change. I say, "Don't worry about culture; these things are things that we know impact on culture, worry about getting them to work in the first place." So one of those might be for instance: who we hire, what's our hiring system, could we change the hiring system? Well, let's do it. Then the person gets to fiddle around with it and sort of optimise it, and the one person who's not allowed to be brought into that list is the HSE manager.
Prof. Dov Zohar	Generally I think that organisational culture is the higher-level construct that tells us what should be included in the facet of safety culture. So I perceive safety culture as a particular expression or a particular dimension of organisational culture. I think climate, safety climate in particular, has to do with the perceived priority of safety in the workplace. The relationship between safety climate and culture is quite complex. I haven't seen a model that I can really accept as a model that solves the issues. How do you differentiate precisely between safety climate and culture? My approach is that safety climate is an expression of the underlying safety culture. I believe in a 'dripping' kind of model in the sense that senior management is the source of both culture and climate in the organisation. But when you go down the organisational hierarchy, individual managers have discretion. Very often, some managers overweight the priority of safety based on their own personal beliefs and values, and other managers underweight the priority of safety, based on their risk-taking biases and so on. We have values in the company, I mean enacted values, rather than espoused values. Does the company really prioritise employee health over, let's say, short-term profits? I'm trying to develop a methodology for measuring the size of the discrepancy between the espousal of employee safety and health and its enactment, on a daily basis. I think it's worth starting in that direction to help us understand the relationship between safety climate and safety culture.
Prof. Sidney Dekker	I'm deeply sceptical about the ontological alchemy that we are willing to engage in when we talk about culture and climate. What I mean by ontological alchemy is that we take human constructions and turn them into fact. We should never overestimate our epistemological reach with concepts like safety culture or safety climate. They are our own constructions and as such all they do is make artificial distinctions with which we can deal with the buzzing, looming complexity of the social order. Safety culture is nothing but a discursive practice, a set of words, artificial distinctions that create an object of knowledge. It is at our peril that we convert that into a measurable fact. The whole point of the interpretivist rather than functionalist approach to culture (I wouldn't necessarily call it descriptive versus measurable – I think both are measurable and both are descriptive.)…A more interpretivist approach is to say, let me try to get into your head and look through your eyes at the world and see what makes sense. What distinctions do you make? What's relevant? What's not? What do you hang your practice on? What's dodgy? What are the things that frustrate you on a daily basis? That bottom-up understanding of culture becomes ultimately much more powerful and much more respectful of those who constitute the culture. The claim I want to make most strongly is that safety culture is becoming, or has already become, the new human error in that it fits hand in glove with behavioural-based safety programs, which really are code for blaming the worker.

Not surprisingly, the interviews reflect some of the contrasting views, dilemmas and debates identified in the safety science literature; however, there also is evidence of agreement. Dekker's characterisation of culture and climate as "ontological alchemy" or something magic that we construe as real contrasts with Hudson's view that the term safety culture

should be retained because "you can smell it." Hudson is critical of safety climate questionnaires because they fail to provide organisations with direction on what to do next to improve safety, and Zohar is critical of safety culture surveys and change programs on the basis that these are unscientific in that they have no supporting evidence base. Hale and Hopkins agree on the importance of leadership in shaping organisational culture, and on the conception of culture as a group, not an individual, phenomenon. Hale, Hopkins and Hudson agree that if the term safety culture is to be retained, then it should be understood as an aspect of the wider organisational culture.

An overarching theme that can be inferred from the researchers' responses is the pivotal importance of organisational and management practices focused on improving safety or, as Hale put it, what works "in favour of safety." Hopkins referred to these as "collective practices" of the organisation, while Hudson suggested that, rather than worrying about the culture, focus instead on putting in place structures and processes that make a difference and that we know impact upon culture. Zohar spoke of 'enactment,' while Dekker called for a bottom-up understanding of culture, including an understanding of local practices and "things that frustrate you on a daily basis." From this perspective, overcoming things that frustrate workers or make it difficult for them to work safely is not going to be achieved by fiddling with the nebulous concept of safety culture, but by implementing changes to collective practices that make it easier for workers to be successful. Both Dekker and Zohar view this as the more ethical path.

6.2 Views of OHS professionals

Collectively, the views of OHS professionals also reflect the confusion and ambiguity evident in the safety science literature. However, the OHS professionals expressed strong opinions on the processes for changing culture in their respective organisations, and some indicated that they often rely on Hudson's maturity model to guide their work. They agreed that culture change must start with leadership and viewed safety culture as a subset of organisational culture. When asked to define safety culture, a common response was "the way we do things around here." Interestingly, they did not necessarily use the term safety culture when implementing changes to improve safety; for example:

> *In the field, we won't talk about culture, we won't use the phrase culture. If we say we want to improve the culture here they're not going to know what you're talking about.*

Instead, they tended to refer to organisational or management practices for improving safety; for example:

The organisation also understands the difficulties that are faced by the workers, and has good engagement processes in place to understand, engage with the workforce to understand the difficulties they're facing but also to make sure that we adequately provide all the right materials and support for them to succeed.

The whole concept of 'safety culture prevents accidents' is just a flawed concept. The safety culture doesn't prevent accidents. The people who are doing the work and the resources and how we set up work is what will prevent the accidents from occurring.

6.3 Views of SME consultants

While consultants who provided OHS advice to small and medium enterprises (SMEs) varied in their views on safety culture and its relevance to SMEs, they agreed that talking about culture as "the way we do things around here" works for SMEs. There was consensus that leaders instil the culture and establish how things are done, and that the impact of leaders in SMEs was greater than in large organisations. Consultants agreed that it was their job to "read the culture" as a first step to understanding the business and providing advice; responses to how they did this included asking Do they have an OHS policy? What training do they do? What gets reported? and What type of resources? and considering engagement with staff, level of reporting, and physical workplace, housekeeping and equipment. Essentially they read, or infer, the culture on the basis of the organisational and management practices that focus on safety. Consultants agreed that keeping it simple was the key to success in helping SMEs to improve safety.

7 Analysis of evidence from the literature, interviews and focus groups

Since the 1986 Chernobyl nuclear disaster brought the 'safety culture' to the fore as an avenue to explore for improving safety performance, there has been an explosion of academic and organisational interest in the construct. Although unresolved debates and definitional issues surround the concept of safety culture, organisations continue to cling to the idea of safety culture as a panacea for their safety problems. Consequently, the concept of safety culture is reified and normalised, eschewing a richer understanding of organisational culture. In the process, attention is diverted from the issues of power, conflict, meaning, symbols, diversity and contradiction that make up the rich tapestry of organisational life and culture (Antonsen, 2009c; Dekker & Nyce, 2014; Silbey, 2009). Understanding organisations as cultures widens the frame of interest for thinking about improving workplace safety. Therefore, continuing to debate and pursue safety culture as a 'thing' to improve safety is fruitless. Workplace safety may be better served by shifting attention and discourse from changing safety culture to changing organisational and management practices that have an

immediate and direct impact on risk control in the workplace. Such an approach avoids reifying and normalising safety culture either as a 'thing' to be managed or as something that is good or bad.

Changing organisational and management practices is consistent with the popular definition of safety culture as "the way we do things around here." If this definition is expanded to "the ways we understand things are and ought to be done around here" (Myers et al., 2014, p. 27), then the organisational and management practices that focus on safety (the way we do things around here) are a reflection of the culture of the organisation and the systems of meanings that guide behaviour (the ways we understand things are). Proposed changes to organisational and management practices that focus on safety should be understood in the context of the wider organisational culture, with organisational culture rather than safety culture becoming the primary concept of interest (Hopkins, this chapter), thus avoiding the debate and confusion over safety culture and its definition.

Organisational culture, or thinking culturally about organisations (Alvesson, 2013), should be understood as a metaphor rather than a variable. Such an approach allows the culture of the organisation to be described, and such descriptions will help organisations frame and shape changes to organisational and management practices designed to improve workplace safety. Reconceptualising culture in this way is consistent with a theme in the literature that distinguishes between what culture *is* and, importantly, is *not* (Dekker et al., 2014; Hale, 2000). Alvesson (2013, p. 6) distinguished between culture and social structure: "Culture describes social action as depending on the meaning it has for those involved, while social structure describes social action from the point of view of its consequences on the functioning of the social system." The broader concept of culture then is fruitful when it comes to implementing management practices designed to improve safety.

All organisations have a culture that will affect and be affected by management practices designed to improve safety. Conceptualising the relationship between culture, management practices and safety in this way shifts the focus from changing the safety culture to something nebulously good or bad to changing management practices (social structure) based on a deep understanding of existing meanings and symbols (culture), both of which inform social action. This view of the usefulness of culture is supported by Amalberti (2013, p. 105):

> If a local safety intervention has to be undertaken in an enterprise within a specific period of time, rather than expecting to change its culture, the opposite approach should be taken: deducing (from an assessment of the culture) what margin exists for real progress to be achieved by the enterprise, in view of its culture.

Understanding organisational culture as a metaphor rather than a variable to be manipulated (Alvesson, 2013) helps managers and OHS professionals to think culturally about their proposed changes to practices that focus on safety.

Organisational culture, reconceptualised as a metaphor and understood as a system of meanings and symbols that groups of managers and workers share and draw on to create safety, provides an important backdrop of understanding for evaluation of changes to organisational and management practices. Climate surveys should be used to measure changes effected by management practices, not as a starting point for culture change. In the longer term, changes in practices that favour safety may result in new metaphors, meanings and symbols characterising the evolution of organisational culture to focus more acutely on safety.

7.1 What does an organisation that focuses on safety look like?

Shifting the focus from changing safety culture to changing organisational and management practices that favour safety invites the question: what does an organisation that focuses on safety look like? Table 3 provides a composite of key stakeholders' opinions; a total of 31 management practices within 14 focus areas were identified as characteristics of an organisation that focuses on safety.

Table 3: Characteristics of an organisation that focuses on safety

Area of focus	Practice
1. Reporting	• Rewards bad news • Challenges good news • Institutionalises a reporting system • Accepts that people are allowed to complain
2. Risk	• Promotes understanding of risk and how it is controlled • Institutionalises a clear and shared picture of risk • Promotes 'creative mistrust' rather than complacency • Implements structures and standards to support the control of risk • Promotes understanding that work is sometimes dynamic and complex; establishes processes for dealing with complexity as well as linear aspects of work • Promotes understanding of the difficulties people face in the workplace
3. Physical environment	• Maintains excellent standards of housekeeping
4. Organisational design	• Safety professional/s report to the CEO through a line of report separate from operations
5. Incentives	• Implements incentive schemes for managers that focus on the control of risk rather than injury rates
6. Decision making	• CEO makes decisions in favour of safety
7. Engagement	• Leaders and managers engage workers in conversations about how to improve safety
8. Rules	• Implements processes for improving procedures

	• Trials new ideas, has less-proscriptive requirements, provides more freedom to innovate but with greater review
9. Resources	• Provides and maintains suitable tools and equipment • Provides the right materials for workers to succeed
10. Learning	• Enables and supports ongoing learning • Implements processes for understanding and learning from variability • Focuses on success and setting people up for success • Implements processes for making the invisible visible
11. Accountability	• Sets clear expectations and accountability
12. Ethics	• Looks after people • Encourages whistleblowing
13. Business integration	• Integrates safety into all aspects of the business • Places safety alongside business objectives
14. Leadership	• Leaders actively and visibly promote safety

8 Legislation

Although this chapter is about more than compliance with OHS legislation, it is important to reflect on the legislative requirements underpinning OHS management.

OHS legislation recognises that leaders of an organisation are critical to a good safety culture and that accountability throughout the organisation, and the provision of financial, physical and human resources is necessary for effective management of health and safety. Thus legislation imposes duties on managers and the organisation to implement systematic approaches to eliminate, or at least reduce, work-related risk to health and safety. These duties apply to all levels of decision making and there is a *due diligence* requirement to ensure compliance with the duties under the legislation.[6] Also, OHS laws require workers and management to work together to implement and improve upon work health and safety standards. The thrust of this chapter is consistent with OHS legislation; it is the management practices, what is actually done and the outcomes that are important, not the amorphous, hard-to-define 'safety culture.'

9 Implications for OHS practice

This chapter challenges the thinking around organisational and, particularly, safety culture. It offers OHS professionals a different way of approaching discussion about culture as it relates to OHS and has implications for how they construct their advice, and develop and implement strategies. The responses of two OHS professionals asked to reflect on the implications for

[6] See *OHS BoK* Principles of OHS Law for detail on the duties under the legislation and a discussion of *due diligence*.

OHS practice are provided below. The first is a general reflection and the second has particular relevance for SMEs.

Rod Maule (Director, Safety, Quality and Risk Management, Transdev Australasia):

> *In some ways you could be forgiven for a degree of frustration with this chapter as it seems to sum up 30 years of research and discussion as being in some ways inconclusive and contradictory. On the other hand, this of course is the key insight that all OHS professionals should be aware of.*
>
> *OHS professionals should take from this that it is fruitless to continue to use the terminology of 'safety culture' and to focus on changing culture by itself; it is far more fruitful to focus on changing organisational and management practices. OHS professionals need to constantly question the value of what they are doing and make sure that it is strongly bedded in changing practices to be most effective. A culture where management is committed to health and safety is a great cultural goal; however, putting in place practices that demonstrate management commitment is far more fruitful.*
>
> *As an OHS professional, you should use this chapter to understand some of the seminal thinking and history around culture in the OHS profession. This will help you to be better critical thinkers about approaches and solutions that are effective for the organisation. You need to be able to coherently debate and critique solutions targeted at 'fixing' the organisation's culture. You will be inundated with people both internally and externally pushing their silver bullet solution to your culture issues. This chapter gives you a good base for being able to select or tailor different approaches that can deliver improved management and organisational practices.*
>
> *The discussion of culture in this chapter enables a broader understanding of the multiple and overlapping causes of safety incidents. It is arguable that an effective OHS professional should help people in their organisation to see that accident causation is not as simple as root causes for an event. The wider practices in the organisation that are derived from and help set the 'culture' have significant impact on events in organisations. With this understanding, OHS professionals are more likely to come up with a range of targeted changes to management and organisational practices that can minimise the chances of similar events happening again. Without this they may default to simplistic solutions that target symptoms of wider issues, such as installing guarding on machines rather than considering the wider practices that lead to unguarded machines in the first place.*

This chapter helps OHS professionals understand that culture gives context to what happens in the organisation and what will or won't work in the organisation. A range of tools is available to help organisations measure their safety culture or climate. This chapter leads the OHS professional to reflect that while measuring culture or climate is interesting, action is what is needed to improve things. Actions that target practices to improve OHS outcomes are likely to work best when the OHS professional understands current practices in the context of the organisation.

OHS professionals will find that management and organisational practices are what people can see and understand. This turns some of the concepts sometimes seen by people as 'fluff' into hard tangible stuff. It is the focus on the practices listed in Table 3 of this chapter. Deciding what and how to implement to get the most effective results really depends on the context and culture of the organisation. This is the true skill of an effective OHS professional and this chapter provides guidance on how to begin this process.

Often OHS professionals will have responsibilities in their organisation to drive or deliver a best practice or improved safety culture. This chapter helps to put the case that the way an organisation demonstrates this improved or changed culture is by the practices they put in place. Hence to meet this objective OHS professionals should adopt and adapt the practices that they feel will have the most resonance and effectiveness in their organisation. Tools such as Hudson's safety culture ladder, or safety climate tools, can provide useful insights and energise people around a need for change, and therefore optimise your ability to intervene effectively.

Like all professionals, OHS professionals should be lifelong learners in their discipline. It has been a privilege to listen to and join in the debate on the development of this chapter with some of the seminal thinkers on culture in our time. This chapter should be the start of the OHS professional's understanding of practices in organisations that influence and are influenced by this thing called 'culture.' Professionals who understand this are far more likely to be effective and seen to be effective in their organisations.

Denise Zumpe (Owner/Principal Consultant, SafeSense Workplace Safety):

My experience with small and medium enterprises (SMEs) is that they are focussed on getting the job done. They may be family owned and run, and experiencing exponential growth. Most often there is no HR manager or in-house OHS specialist. The relationship of an OHS professional to the SME will usually be that of a consultant.

Small enterprises often have never had an accident and on that basis they believe they are managing safety effectively. The reason for the intervention should be established.

The language of OHS professionals can be confusing and alienating to SMEs so asking about policies, procedures, incident reports, records, risk assessments (of which often there is nothing documented) is not a reliable way to form an opinion on the effectiveness of how they manage safety – or of their safety culture. Because SMEs often can't demonstrate how they manage safety through the use of technology and documentation, the 'artefacts' as described by Shein (2010) and Guldenmund (2000) (see section 2.2.1) provide the critical source of information about the culture, what you see, hear and feel. The five dominant themes nominated by the UK HSE (see section 4.1) of how good organisations manage health and safety apply to SMEs:

- *Leadership and commitment from the most senior person*
- *Line management managing safety*
- *Involvement of all employees*
- *Openness of communication*
- *Care and concern for all those affected by the business.*

These can be portrayed through genuine care and goodwill that is shared by management, staff and even customers (feel), where people look out for each other (see), and with trust which brings control over work and ability to communicate openly (hear). The OHS professional can ensure that open communication is used to create an effective OHS information system and an informed culture. In addition, there are the obvious indications gathered through inspection and observation of the physical workplace, signage, noticeboards, equipment and work practices.

What I'm saying is that organisational culture and its influences on OHS and the characteristics of a good safety culture all apply in the same way to an SME as they do to any other organisation. What is different is how you apply the solution to suit that culture, working within the SME, not trying to impose change from outside. Don't get bogged down with the rhetoric; these organisations don't use words like 'culture' or, even if they do, they mean something different to everyone and are used to describe attitudes or practices that they don't understand.

A challenge faced by the OHS professional working with SMEs is to influence and effect change without relying on documentation and training. Time for training or coaching is always secondary to operational demands. Human resource processes around performance management, performance planning, accountability, training, organisational development and strategy are rarely resourced in either time or money.

Information is shared and people are trained through talking and being shown to do the task by a colleague. As organisations grow, compliance becomes more of an issue; more staff creates a need for consistency around how things get done (induction training, work systems, equipment) and there is greater exposure to OHS risk for directors.

In SMEs there can be a very quick response when the focus is on a particular issue – 'what gets paid attention to' – so when a problem is identified, there's no hierarchy, purchasing departments, forms to fill out. There can be immediate access to senior management or the business owner.

So it's about the practices; that is, what will make the difference.

- *Focus on 'What can go wrong?'*
- *Fix up immediate hazards*
- *Talk about reporting, information gathering and information sharing*
- *Form your own conclusions around the organisational culture and chose an intervention that is suited to the organisation.*

Present the logical argument of why it should be done that way whether people agree with it or not – it just has to be done. You know over time they will eventually agree with it, based on the theory of cognitive dissonance (see section 5.1.2 and Patrick Hudson's comments in Appendix C).

In SMEs, the OHS professional needs to take care not to be seen as the person who looks after safety. Because there may be a lack of clarity around the role, responsibilities and accountabilities of line managers (focus is on getting the job done, and profitability), OHS may be seen to be the 'safety person's job.' Management leadership is absolutely critical to ensure line management understand and accept their day-to-day safety management role and the safety person is positioned as a facilitator, support and technical expert.

The above advice was reinforced during the final group discussion with OHS professionals and researchers. The outcomes of the discussion can be summarised in three key points:

- Don't try to change the culture directly; focus on management practices and the culture will change anyway.
- Effectively changing management practices requires an understanding of the organisational culture as a context for the management practices.

- Organisational culture is comprised of different group subcultures that overlap to some extent, with the overlap being the common or shared core; a focus on management practices will grow the common core and so the shared culture.

10 Summary

This chapter explored the historical context within which the concept of safety culture emerged and developed in theory and practice. The literature review revealed that there is no agreed definition of the term 'safety culture,' and no definitive model of safety culture. In short, the body of literature is large, diverse, fragmented, confusing and ambiguous. There is little evidence supporting a relationship between safety culture and safety performance. In a practical sense, it is fruitless to continue to attempt to define safety culture. Rather than trying to change something as nebulous as 'safety culture,' the focus should shift to changing the organisational and management practices that have an immediate and direct impact on workplace safety. Organisational culture, however, is a useful concept if understood as a metaphor rather than a variable. Organisational culture informs changes in organisational practices that focus on safety, and may evolve as the culture learns and grows over time. While they do not inform culture change, safety climate surveys may be a useful measure of the perceived effectiveness of changes in organisational practices focused on safety. This view of organisational culture has implications for practice, both for OHS professionals and management.

Key thinkers

M. Alvesson, S. Antonsen, S. Clarke, S. Dekker, R. Flin, F. Guldenmund, A. Hale, A. Hopkins, P. Hudson, J. Martin, K. Mearns, J. Reason, E. Schein, D. Zohar

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Appendix A: Interviewees and workshop participants

A1: Interviewees

OHS Professionals	
David Bond	Group Manager, Health & Safety, Thiess Pty Ltd
Debra Burlington	CEO, Enhance Solutions
Dennis Else	General Manager, Sustainability Safety & Health, Brookfield Multiplex
Kevin Figueiredo	General Manager, Safety Health & Wellbeing, Woolworths Ltd
Marian McLean	Managing Director, HSE & Delivery Integrity, WorleyParsons
Nicole Rosie	Director, Health & Safety, Fonterra Co-operative Group Ltd
Andrea Shaw	Mining for Development Specialist, Australia-Africa Partnerships Facility; Adjunct Associate Professor, La Trobe University
Phil Turner	General Manager, Risk & Sustainability, JKTech Pty Ltd
Union Representatives	
Cathy Butcher	OHS Coordinator, Victorian Trades Hall Council
Deborah Vallance	National OHS Coordinator, Australian Manufacturing Workers' Union
Employer Representatives	
Tracey Browne	Manager, National Safety & Workers' Compensation Policy & Membership Services, Australian Industry Group
Christopher Sutherland	Managing Director, Programmed
Researchers	
Sidney Dekker	Professor, Safety Science Innovation Lab, Griffith University
Andrew Hale	Emeritus Professor, Delft University of Technology, The Netherlands; Chair, HASTAM, UK
Andrew Hopkins	Emeritus Professor, Sociology, Australian National University
Patrick Hudson	Emeritus Professor, Delft University of Technology, The Netherlands
Dov Zohar	Professor, Faculty of IE & Management, Technion Israel Institute of Technology

A2: Participants of SME focus group

Ken Armanasco	Director, Safety Dynamics
John Darcy	OHS Consultant, Master Builders Association of Victoria
Theo Kanellos	Director, Kanellos Consulting Pty Ltd
Gloria Kyriacou Morosinotto	Consultant, Contract Safety Solutions
Carol Lapure	Consultant, Occupational Wellness
Leo Ruschena	Senior Lecturer, RMIT University
Glen Smith	Consultant
Geri Sumpter	Senior Consultant, VECCI
Denise Zumpe	Consultant, Safe Sense

A3: Participants of OHS professional and researcher focus group

Gerry Ayes	Manager, Occupational Health Safety and Environment Manager, CFMEU (Vic Branch)
David Bond	Group Manager, Health & Safety, Thiess Pty Ltd
Debra Burlington	CEO, Enhance Solutions
Malcolm Deery	Group General Manager, Health Safety & Environment, Programmed
Kevin Figueiredo	General Manager, Safety Health & Wellbeing, Woolworths Ltd
Andrew Hopkins	Emeritus Professor, Sociology, Australian National University
Rod Maule	Director Safety, Quality and Risk, Transdev
Peta Miller	Director, Australian Strategy, Safe Work Australia
Phil Turner	General Manager, Risk & Sustainability, JKTech Pty Ltd
Trang Vu	Research Fellow, Australian Centre for Research in Employment and Work

Appendix B: Interview questions

Chapter Objective	Industry Questions	Researcher Questions
a) Explore different perspectives on organisational culture, based on either evidence or persuasive argument, as they relate to OHS	1. How does your organisation approach changing culture in relation to safety? 2. Why is safety culture popular / not important / important? 3. What influences your approach to changing culture?	1. How do you think about / conceptualise the relationship between organisational culture and safety culture?
b) Explore the dilemmas, tensions and unresolved issues that arise from these different perspectives on organisational culture	4. What dilemmas, tensions and unresolved issues do you encounter in attempting to change culture as it relates to safety? 5. How do you overcome these dilemmas, tensions and issues?	2. There is a diverse literature in relation to both organisational culture and safety culture. In your opinion, what dilemmas, tensions and unresolved issues to you see in relation to this literature?
c) Expose any gaps between how researchers talk about and frame culture compared and how organisations attempt to change or influence culture, including safety	*Will emerge from interviewing the two groups?*	*Will emerge from interviewing the two groups?*
d) Clarify the distinction between 'culture' and 'climate	6. Do you distinguish between safety culture and safety climate? If yes: a) How do you define safety culture? b) How do you define safety climate? c) How do you use one to inform the other?	3. There is a distinction in the organisational and safety literature between 'culture' and 'climate.' How do you distinguish between and define these two concepts?
e) Clarify the distinction between culture as an explanation and culture as a description in relation to fatalities, injuries, disease and ill-health	7. If you were conducting an accident investigation, what role would safety culture play?	4. Some accident investigations have referred to culture as the cause of, or a significant contributing factor to, the accident. How do you conceptualise the role of culture in relation to accident investigation?
f) Clarify the language of culture or at least expose semantic dilemmas in relation to the concepts of 'culture' and 'safety culture'	8. What would you say is the relationship between organisational culture and safety culture? 9. What language do you use to discuss culture with workers and managers?	5. In your view, what linguistic dilemmas abound in the scientific community in relation to the concept of 'culture' and 'safety culture'?
g) Describe what an organisation with a good OHS culture looks like in practice	10. In your experience, what does an organisation with a good safety culture look like in practice?	6. From your perspective, what would an organisation with a good safety culture look like in practice?

h) Suggest questions OHS professionals should ask about proprietary culture change programs	11. There are many proprietary safety culture change programs. Have you used any of these programs? If yes: a) Why did you decide to use a proprietary program? b) What questions do you ask before selecting a program?	7. Are you familiar with propriety safety culture change programs? If yes: a) What advice would you give to an OHS professional who might be considering one of these programs? b) What questions do you think an OHS professional should ask before selecting a program?
i) Expose cultural myths	12. Much has been written about the role of safety culture in preventing accidents. Have you encountered any culture myths that should be debunked?	8. Returning to the idea that there is a diverse literature on organisational culture and safety culture, what cultural myths are perpetuated by this literature that in your view should be debunked?

Appendix C: Perspectives on organisational culture as they relate to OHS

SP = Safety Professional
WR = Worker Representative
ER = Employer Representative
MG = CEO
Researchers are named

Themes	Industry	Researchers
The role of leadership and change	**SP:** The starting point is always with leadership. **SP:** I always ask to speak to firstly the highest-level person in that part of the business, but we also speak to the person on site who's got the highest level of authority. **SP:** Culture is created by the leaders of the organisation or what interests the boss…fascinates me. **SP:** It's all down to leadership. **SP:** Culture in an organisation doesn't change simply by the change of a leader, and particularly not if the leader's not attuned to some of the challenges. **ER:** Culture comes from the top and you'll never get people focussed on safety if the person at the top is not focussed. **WR:** Leaders' actions have to match their words. **MG:** Senior management, leadership, is actually really important. It definitely has to be led from the top.	**Andrew Hopkins:** It's not just about leaders saying safety is important around here. It's about, what Edgar Schein says, and I endorse this. How do leaders create or change cultures? Leaders create cultures, he says, by what they systematically pay attention to. This can be anything from what they notice and comment on to what they measure, control, reward and in other ways systematically deal with. **Andrew Hale:** I think [leadership is] critical, but it can be a little bit more distributed than it is sometimes written about. Sometimes you read it as though it's only the CEO who can determine that, and if the CEO is not 150% behind it then it won't work. I think that the intervention studies that I did in Holland showed it was a case of either the top manager or the really proactive safety manager (and we couldn't distinguish which was more important) that made a difference. The good companies had either a really active CEO or a really active safety manager or both. **Dov Zohar:** I believe in a 'dripping' kind of model in the sense that senior management is the source of both culture and climate in the organisation. But when you go down the organisational hierarchy, individual managers have discretion. Very often, some managers overweight the priority of safety based on their own personal beliefs and values, and other managers underweight the priority of safety, based on their sort of risk-taking biases and so on. **Patrick Hudson:** You can try and change the culture from the bottom, but that really doesn't work. But you can try at the top and it does. I typically work with the Executive Committee or as high as possible; it's important to have the CEO agree that things have got to change.
Maturity model,	**SP:** We use the maturity model. It's a journey model effectively…how people look at and	**Patrick Hudson:** [referring to the culture ladder] …the only thing that really comes out is leadership. Leadership at the top of the

leadership and change	understand safety risk throughout their business. **SP:** Where we think your organisation is up to on the maturity continuum. **SP:** I would describe the maturity levels within the organisation in terms of people's understanding of safety, what their commitments are. Whether the organisation has a value in terms of safety. **SP:** We have been using the Patrick Hudson model. Most business leaders can relate to Patrick's work very well because it's easier to read and understand. They look at it almost in a shock because people don't have a baseline. They're well-intentioned, but they don't actually have a comparison and so when you produce this comparison I've noticed people go oh! Right! **SP:** I continue to find the maturity model a helpful way of articulating these stages…it's not stages of change, it's just the painting of a picture using a Hudson maturity-type model. I think there's a bit of an ah-hah moment when people can start to see along a whole range of different dimensions the subtly but quite distinctly, different ways that you could approach this topic. **WR:** So one of the things that we refer to is called the four C's. It's a way of saying that within and across the board you could categorise employers under four headings. There are those that are committed, those that are compliant, those that are clueless and those that are criminal. So what you do in terms of organisation culture, to me, requires you to make an assessment of where that organisation sits.	ladder is better than leadership at the bottom. Leaders at the top of the culture ladder are more humble, I have a rule of thumb which says that at the reactive level you need two disasters, because the first disaster you always know that you've got to brain the individuals; to have two in short succession maybe enough to wake you up and say, "Well may be there's more to this than meets the eye." And only when you get to proactive actually is the first time you can say, "Well, we don't actually need the disaster, just somebody else's disaster or we worked out that this is really, really dangerous and we need to think about how we're doing." So as you go up the ladder you are thinking about the number of disasters that you need. Pathological: any number of disasters won't shift you because you know who causes accidents, serve them right if they got killed, is their view. That's one of the beliefs. The deep belief is that individuals have accidents, so if you know the Just World hypothesis? One of the beliefs is the belief in the Just World in shall we say pernicious form down at the bottom, pathological, reactive. The calculative organisation basically starts to wean itself off that thought process. The proactive and generative organisations really are much more aware of the idea of, you know, people may screw up, but hey, who hired these people? If they're that bad who hired them in the first place? Then the first thing you do is turn to … you need to have a serious talk with HR. But HR of course may be a little bit surprised by this. [Are there generative organisations?] No, I think it's a very, very hard place to be. It's hard to get there, it's hard to stay there. One of the things I've tried to stress is that it's not only a ladder but also snakes, and there's one snake actually which takes you straight from top to bottom. And the reason is that the generative culture, is actually individualist. The pathological culture is also individualist, but it's individualists at the top on the grounds of disciplined individualists who do the right things as opposed to undisciplined at the bottom who do the wrong things. But you know, do it for short-term rather than long-term benefit, and for themselves rather than for others. But it's easy to fall into that trap, and the trouble is that to get there you've got

		to go through becoming collectively consensus minded, and then throw that off; you change from being a collectivist consensus-oriented culture to becoming one that's much more individualist.
Identifying a change agent, a champion of change	**SP:** Identifying the right person in the organisation who is a change agent, and respected, to be the champion.	
Measuring change	**SP:** Finding ways to measure it because what gets measured gets done.	
Zero harm	**SP:** I think zero harm is a cultural statement. I don't think there's an awful lot of understanding what that actually means, particularly by people on the frontline. Very often they don't believe it. In my experience, they're looking for honesty from leadership. What frustrates people is when the leadership is saying "we believe in zero harm, we believe in doing everything right, we believe in empowering employees to make their decisions," and then don't follow through.	
Underpinning change with policies and procedures	**SP:** You have to have underpinning policies and procedures and activities to back it up.	
Don't mention the culture	**SP:** I never talk about being here to change the culture. We are to change the way people think and go about their work, which is cultural change.	
It's a group thing		**Andrew Hopkins:** Culture is a characteristic of a group, not an individual. An individual has a belief, for example, that is not an aspect of the individual's culture unless that belief is shared. Culture is not an individual phenomenon, it's a collective phenomenon. **Andrew Hale:** Safety culture is a group phenomenon; it can't exist unless there is a group which is interactive and facing problems or decisions together.
Culture as practices and beliefs		**Andrew Hopkins:** They must be collective practices or group practices or collective beliefs.
Changing culture by changing organisational practices		**Andrew Hopkins:** Until we can focus on those organisational practices and change those, we're not going to do anything about an organisational culture. We certainly can't change the organisational culture by focusing on the individual; it's the organisation's practices that are crucial.

Source of culture as a battle ground	**SP:** I'm not so sure it's useful to think about the source of the culture because that's sometimes a historical issue. What has caused these features to exist in this organisation? I think what's much more interesting is what are the features of the organisation that define its culture? So I don't think it's always useful to think about why this organisation has this particular set of values; it's more interesting to ask "what are those values and how might we change them?"	**Andrew Hopkins:** A sort of to-ing and fro-ing I guess – battle, if you like – between the various sources of culture and there are many sources of culture. **Andrew Hale:** I see them as many overlapping cultures. You've got different subcultures within companies. You have the civil engineering professional subculture, you have the management subculture and you have the workforce subculture. If you accept that there's a number of different subcultures then you've got two issues. One is how each of those subcultures interacts with safety and whether some of the interactions are negative toward safety. But you've also got the question of where those cultures touch and overlap, are there things there which because of a mismatch between those subcultures affect safety negatively?
The pace of culture change		**Andrew Hopkins:** When leaders start to do those things, cultures begin to change very quickly. I'm often asked how rapidly a leader can change a culture; does it take one year, three years or five years? My answer to that is as soon as the leaders start behaving differently the culture will start to change. People are very responsive to messages from the leadership. **Andrew Hale:** I'm not somebody who believes that culture is unchangeable or unchangeable except in the long term. There is plenty of case study evidence for culture changing quite dramatically even over periods of only six months to a year. If you work hard enough and you've got somebody driving it from the top then within a year you can make dramatic changes.
Talk of culture as ontological alchemy		**Sidney Dekker:** The most important thing for me to do in this discussion is to voice an essentially social scientific concern about the sheer questions and the reason people find these questions interesting, the reason being that I'm deeply sceptical about, let me call it ontological alchemy that we are willing to engage in when we talk about culture and climate. What I mean by ontological alchemy is that we take human constructions and turn them into fact. If you look at the number of publications about safety culture and safety climate over the last decade there is a veritable explosion taking over and in fact completely dominating the safety scientific discourse. We

		should never overestimate our epistemological reach with concepts like safety culture or safety climate. They are our own constructions and as such all they do is make artificial distinctions with which we can deal with the buzzing, looming complexity of the social order. The fact that we start sharing this as a factual measurable object doesn't mean that it is real. We should never make that ontological alchemy type-one error, as far as I am concerned. I think that is a deep mistake of any social scientific project, but we are particularly vulnerable, using these social scientific or anthropological ideas in a world that relies on fact. "You've got everything in place, but you've got a bad safety culture. Fix that as well and then everything will be okay." All it is, as Foucault would say, is a set of discursive practices shared by institutions, organisations, individuals, regulators, engineers in which everybody seems to believe that they know what they're talking about and I think a belief that it may in fact encourage not only intellectual sloppiness, but also a moral slide. So to summarise what I just said, I would firmly position myself in saying safety culture is nothing but a discursive practice, a set of words, artificial distinctions, that create an object of knowledge. It is at our peril that we convert that in an active ontological alchemy way into a measurable fact that becomes a commodity that we can trade.
Approaching culture – the functionalist and interpretive approach		**Sidney Dekker:** Now, of course when it comes to culture you have these two approaches, interpretivist and functionalist. This is very binary, but interpretivist would be the sociological or anthropological approach to culture driven by qualitative methodologies and it's very much positioned around seeing culture as something that a set of people, or in this case an organisation, does. It's about the bottom of emerging behaviours that collectively can be seen to form a sum coherence. That coherence we then call culture. The functionalist approach would be the one taken more by psychology, management science and indeed I think safety science, engineering; driven by more etic approaches rather than emic. So rather than from the inside out it goes from the outside in, very quantitative. We measure, we count, we

		tabulate. Of course that which we tabulate and count is pretty much how people feel or believe about certain things. The whole point I think of the interpretivist rather than functionalist approach to culture (I wouldn't necessarily call it descriptive versus measurable – I think both are measurable and both are descriptive)… A more interpretivist approach is to say, let me try to get into your head and look through your eyes at the world and see what makes sense. What distinctions do you make? What's relevant? What's not? What do you hang your practice on? What's dodgy? What are the things that frustrate you on a daily basis? That bottom-up understanding of culture becomes ultimately much more powerful and much more respectful of those who constitute the culture.
The process of cultural change	**SP:** First help them understand where they'd like to go, and then find out where are they now. **SP:** The first thing I do is talk to a lot of people and listen and not impose my views at all, but really try to ascertain what I would describe as the maturity levels within the organisation in terms of people's understanding of safety, what their commitments are and whether the organisation has a value in terms of safety. So I do a lot of listening. And then depending on what I'm hearing we start to work through what we need to do. We start by telling stories about where things worked well and try to get people to understand the different styles and behaviours which were leading good teams on a good path. **SP:** So in that sense I don't think it is something you can manage; it's not something that you can say "well, we're going to change our procurement system", or "we're going to change our training, the competency standards that we use to guide our training," it's not like that. I do think you can seek to influence it, but it's not straightforward or simple, and it's about power. **SP:** It is important to know what the burning platform is. What is the sense of urgency that's required? And linking that urgency or that burning platform to our strategy for change. So the first step is about creating that urgency and that burning platform and linking it back to an organisational strategy.	**Dov Zohar:** There is a distinction here between scientists and practitioners. When you look at the practitioner literature – books and journals – you see multiple claims for success. And each consulting company or safety consulting company suggests that they have developed a certain strategy for modifying the safety culture in the organisation. When you look at the scientific literature, you find very few studies that try to modify the safety culture or climate in an organisation. I mean it's another sort of issue that I'd like to investigate more; in the same sense symbolic interactionism is pretty much the foundation of organisational climate perceptions. Its like, how do we make sense of the environment we work in? I'd love to be able to do a project in which I either record or somehow get information about the kind of communication that goes among workers, like…did you see this event yesterday where the supervisor walked past and didn't pay attention to Joe, who was obviously breaking safety rules? That's symbolic interaction. You have to be able to record the havoc arising that indicates how it actually evolves into climate. **Patrick Hudson:** The approach I've taken to safety culture is to say, "Well look, what behaviours, what actions, what are you doing and how are you doing things now?" And then say, "What are the typical behaviours and actions of an organisation that's better than you are? And can you pick any of those?" You say, "Well, we could do that, so we could for instance, actually listen to reporting." And

	The second step is to understand where and who my champion is. Who can you partner with; who's that powerful sponsor? The next thing is creating the vision. So it's about creating a vision, but not getting caught up in the branding. A lot of safety people, from my experience, will say things like vision zero, destination zero, zero harm and say that's the vision. That's not the vision, that's the tag line, the brand, the symbol that people can identify with. The vision, as I describe it, is what people will say, what they will do, how they will think, how they will act, how they will behave in the context of culture into the future. To me culture is a collection of organisational behaviours that predict to a large degree what people are actually doing rather than what they think. I don't believe attitudes define the culture; behaviours define the culture. My bias is that I focus more on behaviours and behaviour change and symbols and what I call myths and legends. So creating symbols is equally important. The symbol might be a behaviour of the leader; it might be a sign, it might be a logo, and it might be a behaviour or activity. **MG:** I think the first thing to think about is what kind of culture? And often it's just the way you do things. So it isn't necessarily, oh we've got a document that says a process that's followed. If the practice is something else, well that is the culture. And if you think of it like that, we ask what would be the culture you desire or you want? And so if we rephrase it and then look through those things, and you start doing those things, you can actually change the culture to reflect that desired state. So that's actually how we approach it. We said to ourselves, what is the desired outcome, what does it look like, what would be the things you would expect to be seeing happening in that cultural state?	how would you set it up? Well the answer of course is that you measure the number of responses made, or the number of reports and you then maybe incentivise the people who are making the responses, so that they have to do it whether they like it or not. And you pick those sort of things quite specifically. Now that may or may not answer one question, but what then happens is the behaviour changes because in a sense the activity has no choice but to change and you induce what's called 'cognitive dissonance,' that is when your behaviour is inconsistent with your beliefs, when you have no choice, then your beliefs change. And it's a lovely mechanism because it comes for free; every single human employee comes equipped with it as part of a kit. You don't have to buy cognitive dissonance consultancy organisations or do cognitive dissonance courses. I get them to pick three of the 18 dimensions in the safety culture ladder survey. I say, "Which ones are the ones that you think you could work with, either have the biggest delta, maximum impact, or take the worst and take it up a bit?" There's a whole lot of different ways you can do it. Then we try and come to something which is basically in terms of, "Okay, let's take a task, let's define 'milestones', 'deliverables', 'measurable KPIs,' and nominate an individual who's personally accountable to the CEO ensuring that it happens. And everyone's very comfortable with that because that's pretty much how they run things anyway. I say, "Don't worry about culture; these things are things that we know impact on culture. Don't worry about culture, worry about getting them to work in the first place." So one of those might be for instance: who we hire, what's our hiring system, could we change the hiring system? Well, let's do it. Then the person gets to fiddle around with it and sort of optimise it, and the one person who's not allowed to be brought into that list is the HSE manager.
Leaving aside culture to manage safety	**WR:** For a long time in health and safety we used to have those six things that showed an organisation was taking health and safety seriously. Leaving aside the term 'culture' those things are: management commitment, representation, consultation, dealing with the issues, continuous improvement and that they	

	value worker participation. I see that link gets into, what was around for a long time – OHS management systems. They're the same components; we just didn't call it culture. It's the same thing, just repackaged. How much is repackaging and how much is actually new ideas? **SP:** I just think it's an over-sold consultant's piece. I think having a culture that is supportive of managing safety effectively and understanding what we need to do to improve our chances of success is crucially important, but I just don't call that a safety culture.	
Culture as changing the conversation	**SP:** It has allowed us, through the managing director, to change the conversation in the business from just pure compliance with the leading indicators to the quality of the compliance with the leading indicators. The ratio of hard to soft controls, for example, was part of the conversation. You start introducing those sorts of conversations and to me this is when the real culture change starts to occur. What happened through this process was we altered the conversation in the business, so the culture altered on the basis that the conversation in the business started to be focused on very different things, being focused on the things we do to manage safety. So people are focused on the things that they do in the absence of incidents, the things they do on a day-to-day basis. The workers see a very different conversation around safety. Engaging them in a conversation and getting them to tell us stories about work, what works well in the workplace and what doesn't work so well. But importantly again, the conversation is not about safety per se; the conversation is about "tell us when work is difficult and why it's difficult." The idea of the storytelling initiative is that by forcing the issue to have a story, you've got to have players, you've got to have a timeframe. **MG:** One of the biggest ways that we change culture is through what we call safety conversations. So everybody has to go and have a conversation with someone in the field from our board members down.	
Challenging the role of the OHS professional	**SP:** Probably one of the biggest challenges I face is our safety professionals. We've got between 250 and 300 safety professionals or practitioners in the business, so there's a large volume of people. The vast majority, 70%, would be extraordinarily traditional safety	

	people out there looking for people to have their hardhats on and wear their glasses, and dealing with issues in the workplace rather than dealing with them through line management. So that culture is probably one of the biggest things I have to try and change. But the focus first and foremost has to be on the organisational approach; have we provided everything that was required to allow the person to succeed? **SP:** I think one of the big things is probably that the safety professionals have done themselves a little bit of a disservice by focusing on some of the very technical aspects of safety. It's a bit like the old concept years ago with the safety officer going around with a checklist and being a bit like the policeman and being the person with power who could stop the job and all of that. I think that might have been needed back in the '80s, but today for your safety program to work well you need everybody understanding how they can do that and everybody engaged. It's not the power thing for the safety person. The safety people just need to be there, in my belief, to support and help and be there with that technical background if needed. But really it's much better if it comes from the supervisor or the line manager. It's very easy for managers to default to that and say "oh the safety guy or safety girl will do that" and not take on that responsibility themselves. Probably the most important thing is to effectively communicate, in the language and manner that people will understand, what it is you want done and how that will benefit the business. **SP:** I am convinced that when safety professionals hit a performance plateau, rather than achieving breakthrough in that plateau they will change their own belief system to say, well let's focus on something else because I don't know what to do with this as opposed to saying I don't know actually how to get the cut through, if that makes any sense. We switch and we switch and we switch without really embedding and optimising it because we don't know what to do.	
Don't carve off safety from the business – talk the	**SP:** A lot of organisations talk about safety and safety culture. I feel that's a flawed approach because every time you do that, you carve safety away from the business.	

language of the business Conversations	Rarely do you actually get into a conversation about the challenges of just doing work. What we find and what we've found in most of our recent significant investigations is that the weak signals that exist prior to an event occurring (and sometimes the weak signals are there for significant periods), aren't obviously linked to safety; they're weak signals of just difficult work, and people having to struggle, to innovate, to put different methodologies in place to make something work that's less than ideal. And every time they do that the risk increases. If we can intervene in those cases sometimes we can see the direct benefit from a safety perspective. **ER:** If we separate the conversation of safety culture from the conversation of how we do business, then we're just continuing to say safety is different to everything else we do. So I think we need to be careful about that. We also need to look at not just what the theory says about culture that you as a safety professional need to understand, but how you influence that in your business. Something we've talked about in relation to safety people for years and years is if you're going to influence the business you've got to talk in their language and if their business language doesn't include culture, then don't try and talk culture.	
Culture as organisational values and beliefs – the gap between espoused values and enacted values	**SP:** Really making sure that safety is a key part of the organisational values and beliefs and that what's coming out of the leaders' mouths is consistent, all the time. It's almost like it's what you hear, it's what you see and it's also what you feel and you could almost smell it. **SP:** And really you can't change culture, which means changing people's behaviours, if the belief system is not altered. You will get some behavioural movement, but it may not be sustainable if you really haven't changed the belief system. And so when we go back to those belief systems you have to listen carefully to what people are really saying when they say they don't want to do something or it won't work.	**Dov Zohar:** But we have values in the company, I mean enacted values, rather than espoused values, right? Does the company really prioritise employee health over, let's say, short-term profits? I'm trying to develop a methodology for measuring the size of the discrepancy between the espousal of employee safety and health and its enactment, on a daily basis. I think it's worth starting in that direction to help us understand the relationship between safety climate and safety culture. **Patrick Hudson:** We've got a lot of questionnaires measuring attitudes, but we have very measuring beliefs and values, and that's because we teach students how to measure attitudes; we don't have a methodology to teach them how to measure and unpick beliefs. Beliefs, I think, refer to in a sense the things which you believe to be, and so are immutable, and the processes that you understand, in your understanding of how to

		achieve or achieve ends or to move things or how things work. The belief that people who have accidents, in a sense, cause those accidents is to do with that. Just World structure that they're bad people: bad people don't look, bad people are internally focused. I think values are interesting. Like safety's a good thing. Making money is a good thing. When you've got a belief structure that says you can't make money because safety costs money, profits make money, production makes money, then you've got a value but the beliefs are getting in the way. I really think that almost everybody you talk to will hold safety as a value, and so the paradox that you have to explain is if everybody holds safety as a value, how come they do it so badly? And the answer is, most of them don't believe it's actually achievable.
Small business and getting on with the job of controlling risk because it's the right thing to do	**ER:** I think SMEs are not normally thinking culture. You tell them that they've got a problem they need to fix and they just go and do it.	
Behaviour-based safety tainting safety culture	**ER:** I think in some ways the bad reputation that the concept of safety culture has is closely linked to behaviour-based safety in people's minds. Behaviour-based safety has a bad reputation amongst a lot of people; that behaviour-based safety is about telling the operator how to do things safely and not fixing the rest of the organisation. There's been a lot of work in that area under the banner of safety culture which has been about safety observations and telling people you did this right nine times out of ten but you did it wrong the last time. The true application of behaviour-based safety actually recognises that the biggest behavioural influence is what managers and supervisors do, decisions about how they manage the business so that people can be safe. But it's got a really bad reputation; you mention safety culture to most of my union colleagues and they will immediately say behaviour-based safety, it's about telling workers to work more safely. **WR:** Within our industry there has been an avalanche in the last five years (well probably	**Sidney Dekker:** The claim I want to make most strongly is that safety culture is becoming, or has already become, the new human error in that it fits hand in glove with behavioural-based safety programs, which really are code for blaming the worker.

	five to ten, but definitely the last five) of a real push around behaviour-based safety. These programs work initially, but they don't actually tend to work in the long run. And they definitely don't have any impact on health. They supposedly have managerial commitment, but often they actually miss proper risk control and higher-level controls. So they focus down at the bottom of the hierarchy.	
Don't stop talking about safety culture		**Dov Zohar:** I don't agree with it [stop talking about safety culture]. Safety culture is a very important concept. **Patrick Hudson:** [is safety culture a relevant concept?] Yes. It is; you can smell it.
Changing culture by changing the metaphor	**SP:** Part of it is unpacking the organising metaphors that are powerful in that organisation; are they damaging metaphors or are they empowering … metaphors that value humans? You've got to work out a way of changing those [damaging] metaphors.	
Management systems and culture		**Patrick Hudson:** If you've got a good management system and a lousy culture, the management system, forget it. If you've got a good culture and a lousy management system you'd probably get away with it.
Having a go	**WR:** Even if you end up with a lower order control but have considered a higher control and for whatever reasons you can't really implement the higher order control, the fact that you've considered and talked about and thought about the higher order control is actually quite different than just implementing the lower order control. It changes the way that people think. So even if the outcome is not always the best in terms of the hierarchy of control, if you've tried, that again is a difference about how people perceive things, about how people interact, because they know that people are willing to have a go at doing a better job. And if you can't, well you can't, but if you're willing to have a go, then people actually go oh well, they're willing to have a go, so that's a good thing, maybe we'll have a go too.	
The organisational context for safety	**SP:** I come from a view that what's important is the way the organisation does things and the way in which it thinks about safety within the context of what it does. Injury and disease are things that emerge from the work of the organisation – a sort of emergent property – so therefore I'm trying all	

	the time to say, “how can you understand the organisation enough to help safety emerge from the activities rather than fatality, injury and disease?” It is an enabling backdrop that cascades down the organisation, providing a respective environment down through the organisation that enables things to bubble away a bit from below and in different pockets and so on, and encourages an openness about what’s going on. I suppose it’s a strong belief in social processes. It also demonstrates that this is an issue that the organisation wants to be taken seriously and hopefully can articulate down through the organisation. Finding what it is that the organisation holds dear and then trying to align wherever you can the aspects of health and safety that are coincident with that or supportive of that. Where’s the energy in this organisation for cultural change, and how do I articulate and embed health and safety in that conversation about the cultural change?	

Appendix D: The relationship between organisational culture and safety culture

Themes	Industry	Researchers
Safety culture is directly linked to one part or aspect of the organisational culture	**SP:** There's a direct relationship. Safety culture is ultimately about how people work together and control risk. At the end of the day that's what safety is about – controlling risk – and organisational culture is about how people work together and control risk. The organisational culture and the safety culture are directly linked. **SP:** I think they can be closely aligned because if an organisation is mature it will recognise that safety is a key contributor to this and they'll understand that a good safety culture usually translates to good business. **SP:** I am more concerned about the overall organisational culture and seeing safety as just one aspect of that overall organisational culture. **MG:** I think you talk about organisational culture and its relevance to safety.	**Patrick Hudson:** Safety culture is part of the organisational culture, but it's only a part. I think that to obsess about safety issues is to fail to understand the context of the wider organisational culture.
An organisational culture that prioritises safety		**Andrew Hopkins:** I would say the primary concept is the organisational culture; culture in general is a more fundamental term than safety culture. So if you take organisational culture as the primary term, then we can then define safety culture in those two ways I talked about earlier. Safety culture is simply an organisational culture that prioritises safety. **Andrew Hale:** I see safety culture as an aspect of organisational culture. It's a bit like the relationship between safety management and management; it's an aspect, not a separate element. Safety purveys the organisational culture so I prefer a definition of safety culture that makes it clear it is the aspect of organisational culture that impacts on safety. Is that aspect in favour of safety or against safety? We need to distinguish those two concepts very clearly. The safety management system is the structure and functions, and the safety culture is why it works or doesn't work in favour of safety, the attitudes, beliefs and motivation to use those structures and functions in particular ways.
A subset of organisational culture	**SP:** Health and safety culture is just a subset of organisational culture. It is one aspect of organisational culture, which is about our people's health, safety and wellbeing.	

	SP: Cultures can be described in a whole range of ways, and some of those descriptors would be the amount of emphasis or time they give to safety and how actively they manage safety, but I don't see that as a safety culture; that's just a part of the culture of the organisation. And for me, to affect the safety aspects, affect the culture of the organisation, not just the safety culture. Every time I separate safety out I'm removing safety from normal work, and to me that's a big mistake. **SP:** I think it is important for people to understand that we need to have a safety culture, but as I said it has to be wrapped up within the organisational culture. Safety culture is a subset within the organisational culture **ER:** I don't think they can be separated. If you try and separate the two, then you're saying safety is separate to how we do business. I think when safety professionals are talking to the organisation, if they start talking about safety culture as something separate, then they're setting up that whole concept that safety is different to running a business. **WR:** I think we're all getting a bit caught up in whether safety culture is part of organisational culture, and then you sort of go over into your HR and IR bit. The bottom line is it's all about the way in which people are treated and valued at work. Because unless you do that you'll never have a good culture.	
Organisational culture as the higher-level construct		**Dov Zohar:** Generally I think that organisational culture is the higher-level construct that tells us what should be included in the facet of safety culture. So I perceive safety culture as a particular expression or a particular dimension of organisational culture.
Organisations have cultures	**SP:** I find that using the term 'safety culture' as if it was somehow in opposition to 'organisational culture' is quite bizarre. Organisations have cultures, and the way they deal with and treat issues to do with people's health and safety is part of their organisational culture. I don't even think it's sensible to think about safety culture as a subset of organisational culture because that still implies somehow there are boundaries that you can draw between the two.	

	Organisations come with values, beliefs, norms, artefacts and symbols, and all of those things impact on the way people are treated within the organisation. So I don't think it's a useful distinction to draw. You're looking at the ways organisations deal with people.	
No such thing as safety culture	**SP:** There's no such thing as a safety culture, it's an organisational culture. **WR:** My fundamental problem is I'm not sure what people mean by safety culture and safety climate. I mean, if it's the way you do things in an organisation, I don't understand that safety's any different to how you should do things anyway, or how things work. So I find it really difficult, this cutting off and branching off to calling it safety culture, something different to the overall sort of managerial culture and the way things are done in an organisation. So I have a fundamental problem with it.	

Appendix E: Defining culture

Themes	Industry	Researchers
The way we do things around here (safety culture)	**SP:** I think culture is, in the simplest form, the way we do things around here, so be that from an operational perspective or a safety perspective and so on, and it's just the way we do things. **WR:** Safety culture, I mean isn't it basically the way we do things? So the way we do things is the way we talk to people, we make decisions that involve people, we listen to people, we take responsibility for our decisions. We're willing to re-look at our decisions and go back and check and change. That's a good organisational culture. It's a growing culture. It's a culture that is the way of doing things to improve things and accepting that it's continuous, that it involves everyone. And that it's not the privilege of any particular group. **MG:** Culture is the way you do things.	**Andrew Hopkins:** One is the way we do things around here, so that's collective practices. And the other is the mindset; it's the way we think around here, if you like. So we have those two different ways of focusing on the notion of culture. It is important to recognise that those two approaches are complementary, not contradictory. Having said that, I would want to go on and say it's much easier to observe people's practices than it is to know what's inside their head. So from a point of view of researching or studying what the culture of the organisation is, it's simpler to start with What are those practices? Now I want to also say that these two things are not inconsistent, they're actually complementary, and you have to understand that they are complementary, that the reason why we do things around here this way is because we think we ought to be doing things around here this way. **Patrick Hudson:** The thing about culture is that what people don't realise is because they're in it (and as one of my definitions of culture, it's the bit that people don't talk about), it's quite hard to get them to talk about it simply because they think that that's how things are, that's normal. It's not just how we do things around here, but how things should be; it's that concept of 'normal' which of course leads to the idea of normalisation gets you in to what is normal. One of the metaphors I use: it's rather like asking fish about water; basically the most that they can usually say about water is they swim in it, but they don't realise really just how much it directs what they do.
Groups interacting as they solve problems (safety culture)		**Andrew Hale:** I tend to go with Schein's definitions: that culture comes from the group interacting with its environment and solving problems. If you're not doing work together, you can't have a culture of that group; work in the very broader sense that's where the beliefs and attitudes come from and get built up and get confirmed. So that needs to be very clear in conceptualising the culture.

A snapshot picture (safety climate)		**Andrew Hale:** I think climate is a snapshot which is the starting point for understanding culture. I mean it's a snapshot in the sense that it's not rounded or deep and it's also time limited.
The perceived priority given to safety (safety climate)		**Dov Zohar:** I think climate, safety climate in particular, has to do with the perceived priority of safety in the workplace.
The way the organisation operates (organisational culture)	**SP:** The values, beliefs, norms and artefacts that guide the way an organisation operates. It varies obviously within organisations as well as between.	
Beware of definitions		**Patrick Hudson:** You may notice that I've never given a definition of safety culture? And I'm not planning on doing that because I think that the moment you do that you're hung on your particular hook, and it's your favourite hook.
A collection of people's safety-related behaviours (safety culture)	**SP:** Safety culture is a collection of people's safety-related behaviours that form the organisational view.	
No idea what the difference is between culture and climate	**WR:** How do I define safety culture? How do I define safety climate? I don't know what the difference is.	

Appendix F: Cultural dilemmas, tensions and unresolved issues

Themes	Industry	Researchers
Time	**SP:** There might be a difference between what a senior leader wants and what the site leader is prepared to deliver. The site leader might say "how do I fit that in and do the job that I'm also paid to do, which is a processing productivity kind of a role." You always have that tension. You have to free them up a little bit. **SP:** People go "well where are we going to find the time?"	
Linking culture/climate to performance		**Andrew Hale:** One of the things which I think is a dilemma is that we still don't have a vast amount of evidence linking safety culture to safety performance. So we still in my view have quite a lot of problems deciding what is good in the safety culture and in interpreting the safety climate surveys.
Between the unitary and diversity view of culture		**Andrew Hale:** Tensions between the unitary view and the diversity view of culture. Culture in organisations is a Venn diagram of different group cultures which overlap. The common core could be seen as the 'culture of that organisation.' The bigger the common core, the stronger the organisation's culture and the greater its influence on the behaviour of all members.
Resourcing	**SP:** How much is that going to cost? Dilemmas often rise with regard to resourcing. So often people think that to introduce a positive safety culture or to change a culture will take a lot of time and a lot of money.	
What to do with the results of climate surveys		**Patrick Hudson:** [referring to a conversation with safety climate researchers at a conference] Look, it's very interesting as you all said, 'Yes, yes very interesting,' and you all went back into your comfort zone. But when on the second day especially you started talking about how to change culture you started to use my vocabulary rather than your vocabulary because your vocabulary doesn't give you any way of talking about what you wanted to talk about. My vocabulary does.

Appendix G: Clarifying the distinction between 'culture' and 'climate'

Themes	Industry	Researchers
Not sure	**SP:** I'm not quite sure how to answer it to be honest. I guess safety climate is the expectation if you talk about a business or if you talk about a country. **SP:** I'm not sure there's a thing called safety climate as such; I do think there is a climate that impacts the safety culture.	
Synonymous		**Andrew Hopkins:** People use these terms in all kinds of different ways and I think there's some confusion. It's very hard to make a distinction and the simplest thing is to try and treat them as synonymous. But if you're going to make a distinction, then this is the way I would make the distinction. I've already defined culture as the practices, the collective practices of the work group or the organisation, so that's my bedrock definition. Then safety climate simply is the opinion people will have about how important safety is here. Culture can seldom, or not easily, be ascertained by means of opinion surveys. Culture is best studied, I think, by observation, by enquiry and ultimately by participant observation on deep, deep involvement in an organisation, by ethnographic means.
Triangulation		**Andrew Hale:** [referring to Schein's three levels of organisational culture] Climate surveys tap into the artefacts and to an extent the values, but don't, by their nature, get through to the basic assumptions. I think safety climate surveys are part of the triangulation process which you need to get through to the culture. An attitude survey could be a part of that, but it won't be sufficient on its own; it needs ways of interpreting it.
Irrelevant		**Sidney Dekker:** I don't even care about the distinction between climate and culture. Let me put it this way. One does not have any epistemological or ontological privilege over the other category. They are both objective knowledge. They are both constructions that we create in order to get our hands on this vacuum of human behaviour that seems to be that systems that are technically okay, whether it's climate or culture.

Maturity and feel – one informs the other	**SP:** I thought safety culture is what happens on a day-to-day basis that illustrates the maturity of the organisation from a safety perspective. Safety climate is more about how people feel about safety – is it embraced? is it seen as difficult? – so that's sort of like climate. If the climate around safety seems negative, then I would be looking at what is happening in the culture that is driving this and, if it is positive, I would find out what is driving this and encourage them to do more of it.	
Can cause confusion – subset	**SP:** We don't ever use the term safety climate. If we think about organisational culture and we think about how safety culture underpins that, then if you look at some of those definitions, then safety climate would be a subset of your overarching safety culture. It's more about perhaps how a team operates or whatever, but to be perfectly honest, I don't use that term. I think if you start to get too technical like that it causes confusion. People start to say "what's the difference between safety climate and safety culture and what do you really mean?" For us we just talk about culture and we leave it at that. **MG:** I probably don't really use the word safety climate.	
Complex		**Dov Zohar:** I think the relationship between safety climate and culture is quite complex. I haven't seen a model that I can really accept as a model that solves the issues. How do you differentiate precisely between safety climate and culture? I've dealt with it myself, but basically my approach was that safety climate is an expression of the underlying safety culture. It offers some mechanisms or some tools for understanding part or some of the elements of safety culture. There is still a lot of work that needs to be done to untangle these. Climate, no one understands what it is. People who are not in academia and haven't investigated it have no idea what climate is. I'm sorry to say, but some of my close friends and colleagues in this field also mix up the two. And very often they use the two terms interchangeably, in the same paper. I think mostly practitioners are responsible for this fact, but also scientists who somehow are not aware of the distinction between the two constructs.

Semantic	**SP:** I find the climate literature to be nonsense because it's making distinctions as I suggested before that don't actually exist…seems to be quite semantic. What's interesting is how people get treated by an organisation, and how you go about changing it. Whether you'd call it culture or climate or atmosphere or whatever, I think it is really not particularly interesting or useful.	
One is deeper	**SP:** The safety culture or the organisational culture is much deeper than the safety climate which is just a spot sampling of something on the surface.	

Appendix H: Accident investigation and culture

Themes	Industry	Researchers
Culture does not play a part	**SP:** It doesn't play any part. **SP:** We haven't been looking at cultural issues. **SP:** I don't think I'd be talking about safety culture because I think I'd be talking about more specific things. **MG:** Well I think when you're looking at the root causes, those systemic issues are part of that culture. I don't know if we specifically go "what role does culture play?" But our process will look at the systemic issues around management and systems and so on.	
An aspect	**SP:** Yes, definitely. So we'd obviously have a look at all the technical issues around it, so maintenance, etc., but also looking at the behaviour around the incident as well. We'd look at things like hours worked, breaks, experience, knowledge, supervision, contractor, non-contractor, non-English speaking, training, all that sort of basic stuff. Then we would have a look at the culture in the business. Is it one where you take your breaks? Is it one where you rush and get things done? Is it the hero who gets the most done? Is it that people have said "this is too much" in the past, but it hasn't been listened to? That sort of communication and consultation that's been happening behind or before the incident, we'd be having a look at that. **SP:** Yes we do. It's part of the decision tree. When we're doing an incident investigation there's a whole lot of things to consider: the culture of how the team operated, the value set of the lead person or the supervisor, that's all important. Part of your report might go about addressing whether you felt there were gaps or there could be improvements. I think culture certainly has a part to play. It's not the be all and end all because as you know when you're doing a root cause analysis there are a number of things that can feed into that. But it's one aspect that we certainly consider.	**Andrew Hale:** It fits in fairly distally from the accident. If you work back from the accident then the things you look at first are the barriers and risk controls and you work your way back through the technology to the behaviour in using technology in the organisation. That's about where you come to culture, but as an explanatory factor, which explains why people fail to do the things that in hindsight they wished they'd done. Sometimes in accident investigations you come to individual behaviour where you look for and may find causes in that individual's competence or motivation, but you also ask the question at that point: "if I'd plucked that person out of that role and put somebody else in it, would they have made the same decision?" If the answer is 'yes,' then it suggests that you need to look at that group level to find out why this would be a pervasive way of behaving or reacting. And that's when you're into culture.
Culture as cause is not scientific		**Dov Zohar:** [Referring to major accident investigation reports] The underlying cause was the safety culture. In my words, the lack of enacted value that prioritised the employee

		health and safety. If you read the reports now, about other major accidents, they all come to the same conclusion, which is not science, it's not scientific.
Irrelevant	**SP:** Safety culture is a contributing factor to accidents? I mean, goodness me, how silly is that? They didn't have the right values and the safety culture is wrong, well, yeah, but what are you going to do about it?	

Appendix I: Clarifying the distinction between culture as an explanation and culture as a description

Themes	Industry	Researchers
Description more useful than cause		**Andrew Hopkins:** That sense of the way we do things around here will become the cause of the individual's behaviour. But that's a very limited focus on why an individual behaves the way he or she does. A much more important thing is why an accident happened, or why we do things around here in that way. I think as soon as you move beyond the individual you are getting into the notion of culture, which is as a description. And I think that's by far the most useful way of thinking about culture; it's a description. A descriptive term. Treating the concept of culture as descriptive – this is the way things are done here – and then asking why they are done in this way is a very productive way to think about culture and a very productive line of enquiry. It gets at what I would want to call the root causes; while there are no such things as root causes, if we can accept that as a kind of a metaphor, then yes, this line of enquiry gets at much more fundamental causes, root causes, than any other line of enquiry.
Contributing factor more useful than cause		**Andrew Hale:** Maybe a contributing factor is a better word than cause because cause has a tendency to become monocausal in people's thinking and speaking; but certainly it's a contributing factor. However, I would see the link as causal. Because this culture, in relating to rules or use of protective equipment or whatever, was the way it was, that explains why the people, the individuals, broke the rules or failed to use the protective equipment or whatever. So it's causal, yes. It's causal in the sense that by identifying it you are saying: if we change this then that sort of thing will not happen again.

Appendix J: Clarifying the language of culture and exposing semantic dilemmas

Themes	Industry	Researchers
How culture is defined		**Andrew Hopkins:** Safety culture is understood in two quite different ways; people don't seem to understand the inconsistency of these two ways. First, I will quote from the International Atomic Energy Agency definition of 1988: safety culture is "that assembly of characteristics and attitudes in organisations and individuals which establishes that, as an overriding priority, safety issues receive the attention warranted by their significance." That's a very common definition; the implication is that not all organisations have a safety culture. When you look at Jim Reason's development of safety culture in his 1997 book on organisational accidents, it's very much consistent with that. Because he says an organisation which has a safety culture has a highly developed incident reporting system, a highly developed information dissemination process. It has a no-blame culture or at least a just culture; it has a bunch of characteristics many organisations don't have. So in other words, the safety culture is a rare culture. The second approach to safety culture is that all organisations have a safety culture. This is a fundamentally different use of the term – that all organisations have a safety culture. It may be good, bad or indifferent, but all organisations have a safety culture. That confusion runs right through all the literature and people just seem to gloss over it… for that reason I don't like the term safety culture, because that dilemma has never been resolved. I would want to use other terms when I'm talking about an organisation which is focused on safety. I would want to call it a safety-focused culture or a culture of safety. Or a risk-aware culture or a culture that prioritises safety. Jim Reason is now calling it a safe culture. These are cultures which do indeed prioritise safety. By no means then do all organisations have a safe culture or a safety-focused culture. It is in fact a rare organisation that does. I will never ever use the term safety culture in my own work.
Don't use the word culture	**SP:** [In our language] we probably don't use the word culture at all. **SP:** They might use the term the 'culture of the place,' but they wouldn't tend to use 'safety culture' in their language. **MG:** In the field, we won't talk about culture; we won't use the phrase culture. If we say we want to	

	improve the culture here they're not going to know what we're talking about.	

Appendix K: What does an organisation with a good OHS culture looks like in practice?

Themes	Industry	Researchers
Good culture: Understanding of risk is controlled Line of report for the safety professional Design of incentives schemes for managers CEO making decisions in favour of safety Bad news is rewarded Good news is challenged Workforce engagement Clear and shared picture of risk Improving procedures Reporting Champion, either a senior leader or the safety professional Creative mistrust Providing resources Visibility of senior managers/leaders actively engaged Structures Conversations Integrated Tools and equipment	**SP:** You get an understanding of what risk is and an acceptance of how it's going to be controlled. You will just naturally have great housekeeping because why would you do anything else. When you talk to people they'll be able to talk to you knowledgeably about why there are certain standards in place and what they mean and how they use them in practice. A good safety culture is where people understand what it is that are controlling the risks of their everyday life, how they contribute, how they are sure that others contribute, what they would do if they saw someone doing something wrong, even if it was the CEO…I've seen this on plenty of occasions, where you walk through with the CEO and someone will walk up and say, "look guys, you're not supposed to actually be there" or "you're not wearing your hat properly" you know, not people being smart about it, people are actually saying, "we have these things because we really believe in them." **SP:** I would say that it's extremely visible. The managing director, or whoever the top person is, is actively and visibly promoting safety at all opportunities. There are clear structures for dealing with safety within the business. It's a conversation that's readily had. I often see organisations that say it's on our every agenda. And then I pick up their agenda and it says safety and I say to them "well, what did you talk about?" Oh nothing, we had nothing to discuss. An organisation with a positive safety culture truly will take the time to have something in that section on safety on their agenda. They'll have resources for it. It'll be integrated into the way they advertise jobs, recruit, induct people; the way they purchase; the way they buy stuff in; the way they contract manage. It's just, you know, it really is a part of the way they do business. When I speak to people in those companies they are positive around safety; they don't say oh it's a pain, but you know we have to do it.	**Andrew Hopkins:** That is an organisation which does indeed prioritise safety. If we're talking about any kind of hazardous industry, then it's an organisation that has a very strong engineering or safety function, that is, a set of professionals organised in a bureaucratic hierarchy that goes towards the top of the organisation. It's a parallel technical stream within the organisation that runs parallel to the commercial profit-focused stream. The sort of rule of thumb is that if the top safety or risk manager reports to the CEO, then this is an organisation that does give priority to safety. So it's one of the first things I ask when I'm looking at organisations. Who is your most senior risk or safety manager? Where do they sit in the hierarchy? Who do they report to? If they report to the CEO then I'm impressed. What are the incentive schemes that operate within the organisation? And what kind of behaviour is being driven by those incentive schemes? I would say unless an organisation is giving a great deal of attention to thinking about this, it's likely those incentive schemes are going to be undermining safety in various ways. The CEO is visibly making decisions in favour of safety. So not just making statements in favour of safety, but making decisions in favour of safety. For example, to close down something for safety reasons or to spend more money on something for safety reasons. It's an organisation where bad news is rewarded, indeed celebrated. And that is the movement of bad news up the organisation. The people further down are aware of things that are wrong or not as they should be and they report those things up the organisation. That bad news is not only accepted, but it's actually celebrated and rewarded further up the organisation. Correspondingly, good news is challenged. If you get a message from further down that everything is fine and you're constantly getting these messages that

Ongoing learning Symbols Understands complexity and the linear Clear expectations and accountability Understands the difficulties people face in the workplace Provides all the right materials for workers to succeed Changes the initial conditions – trial new ideas, less proscriptive requirements, more freedom – greater review Understands variability Focuses on success What you hear and what you see when you walk in the door How the organisation prioritises safety – the ethical thing to do Makes the invisible visible People are allowed to complain People feel looked after Disciplined, repeatable Intent	So looking at tools and equipment, ongoing learning, symbols such as walkways and health programs, hazard reporting is clearly understood, utilised and followed through. I've seen some people say "we've got a hazard reporting system," but when you talk to the guys on the shop floor, they've got to go and fill out five pieces of paperwork, get it off the intranet, get three people to sign it, do the secret handshake; they're not going to do that are they? **SP:** I think the first thing is what you sense immediately you enter the door of the organisation. It'll be intrinsically embedded in their culture. For example, people will talk to you about safety as part of your initial discussions, whether it's in your induction or interview there will be questions about health and safety. They'll talk about it, they'll talk about the importance of it. **SP:** To me it's an organisation that understands. I think there's a combination in safety of needing to understand the aspects of complexity and some of the linear pieces as well. Clear expectations around the things we do to manage safety and manage those accountabilities as well. The organisation also understands the difficulties that are faced by the workers, and has good engagement processes in place to understand, engage with the workforce to understand the difficulties they're facing but also to make sure that we adequately provide all the right materials and support for them to succeed. To me an organisation with a good culture focuses on all those aspects to support success, and success can be in a whole range of ways. You set people up for success. You're putting a whole range of starting points in place out there, so you're changing the initial conditions and you've then got to observe to see what the outcomes are. One of the things as well is that people are reluctant in safety to trial new ideas, and then one of the things for us is how do we release control somewhat, in other words have less prescriptive requirements on the workers, allow more freedom but try and also allow a greater level of review over when people come up with new ideas or new ways of doing things to be able to review that. And so it's approving some	everything is fine, then you don't believe that and you're sceptical of that. A senior leader is sceptical of that and saying "can I really rely on this good news that I'm getting?" **Andrew Hale:** Very strong, active engagement with the workforce: not just being told to do things but being engaged in the process of deciding what to do and continuously checking. Having a clear and shared risk picture so that when you ask people, anybody in the company, what are the safety priorities, they will come up with roughly the same answer because the organisation has a very clear picture of the way things can go wrong and what the results would be if they did and that is shared. Also the belief that things can be improved. And the activity would be finding ways to be busy with issues of safety such as when you're reconsidering procedures by reporting dangerous situations or undesirable situations. What we talked about with the leadership would be, yes top management but also somebody who is the safety and health champion. And that's where you get into the difficulties with the small companies where one of your options is not there. So it's got to be at the top manager's level because there's nobody (no safety professional) prodding them and poking them and giving them ideas to getting them enthusiastic. What I've always called creative mistrust; being critical, not being complacent. And providing resources. **Dov Zohar:** If management in the company – senior management and middle-level managers – adopt values that prioritise employee safety and health, because health is pretty much the same as injury, except it develops 40 years later, in terms of all sorts of diseases. Prioritising safety and health is probably the more ethical thing to do, rather than increasing profits by turning a blind eye to safety and health issues.

Encourages whistleblowing Realism Puts safety alongside business objectives Housekeeping	of the initiatives and the changes that are occurring out there. Understand that it's a variable workplace; things are going to change and we expect our people to come up with ideas. This is where we want these conversations around what was difficult because difficult work is often a sign of this increased variability. What we find then is we can come up with the solutions that are a way to improve or make the work process more efficient, to have an agreed way, a different way, of getting around that piece. That in itself embraces variability, but also looks to dampen the parts that we wish to dampen. Having an organisation that focuses on success rather than on managing failure or reacting to failure. If safety people are focused on success, then that's beneficial. Not only from a safety perspective because it also gives the safety people within the organisation greater credibility. But because we are helping organisations to become more successful as well as achieving good safety outcomes. **SP:** If you're visiting a company it's the first thing you see when you walk in and the first person you talk to. **SP:** Once you get into the organisation it's what you hear from people; it's how they demonstrate, it's what they do, it's how they look after you, it's all those small things that you hear and you become aware of and you realise that it is an important value for the organisation. **SP:** Get people to see what they can't see at the moment, so make the unthinkable visible, so that they're able to act on it. A place where people are allowed to complain and whinge; where people are respected. Even though they may be a whinging, moaning, complaining pain, having someone in the organisation playing that role is actually really important; you need to be able to get the bad news. It's an organisation where people do legitimately feel that they're looked after, that people care about them, and that the work they're doing is important and worthwhile. **SP:** It is discipline, it is repeatable, and it is consistent. It happens again and again and again.	

	SP: People in the organisation have a creative mistrust in the risk-control system, which means always expecting emergent problems and they're never convinced that the safety culture or organisational performance is ideal. The safety whistle-blowers are accepted and safety personnel, everyone, is constantly seeking to identify risks within the organisation. I think it's all about whether the organisation has that sort of realism about it in which it's clearly trying to make sure that everyone gets home okay, but it's very realistic and not silly. It's an organisational culture that puts safety alongside its other objectives, balances them well, tries to blend them and not separate them out, because I think the moment they're separated they're going to get lost. **MG:** Leaders across the organisation are all actively engaged and involved in talking about safety. If there's an issue it's dealt with straight away. I think a very good safety culture also means that you've got lots of people in the organisation who are actually seeing things outside of their own work premises and practice and thinking gee whizz, I might progress that. A big thing for me is general housekeeping.	
Bad culture: People doing their own thing By the book Poor modelling by leadership Ticking a box Bonus arrangements	**SP:** A bad culture would look like something where people are operating on their own, doing their own thing, not quite sure of why they're doing it. **SP:** A poor safety culture's simply complying and transacting with a task and ticking a box. You have to constantly change the situational leadership and you've got to get the leadership modelling and demonstrating that time in a consistent way. So that is one example of how I see good culture versus just a transactional culture. **MG** Personally I am dead against [manager KPIs and bonuses for safety]. I think culturally again, that's actually trying to measure safety from a point of view of if you achieve that you get a bonus; if you don't you don't. It drives a lot of wrong behaviours, including hiding behaviour where you won't hear about a near miss or all sorts of issues.	

Appendix L: Questions OHS professionals should ask about proprietary culture change programs

Themes	Industry	Researchers
Don't like them – don't be a follower of fashion	**SP:** I actually dislike them a lot; I don't think they help that much because they reflect the tensions of a point in time, not the climate. **SP:** I've got to say I find most of them [behaviour-based safety (BBS) programs] quite flawed. The proprietary versions of those that are floating around I wouldn't give the time of day. **SP:** I think it's difficult to have a proprietary program that really fits perfectly in an organisation. Particularly in an organisation that is bigger than four factory walls with a whole lot of diverse areas and different operations. **SP:** I don't like them [BBS]. They reinforce existing relationships of power and control, which are the ones that are causing damage, and create further barriers between the undiscussables and what's visible in the organisation. I'm not a great fan of the normative models with a series of steps you have to go through. I don't think that's a useful approach, because the way I've seen it operate in practice is it has given people in organisations excuses for not doing things. So "Oh, we can't deal with the way our training system treats people because we're not compliant in these other areas, and we've got to get all that done before we can move to the next step of the culture change process," and I do think that's a normative model. I don't have a problem with using these to highlight particular aspects of the organisation, but I do think that to give the impression that there's a series of sequential steps and there's only one way through them with a beginning, middle and end, is misleading and mythical. Change is always messy, it's always about power. It's not always predictable, and it doesn't always happen according to plan. **WR:** I don't think you'd start with an off-the-shelf program.	**Andrew Hale:** This is a really important question and my first response was a sort of negative one, don't be a dedicated follow of fashion. What I'm objecting to strongly is what I see as being the way the market works: that some companies talk to their fellows, their colleagues, and they hear, "oh we just introduced this program" and they say "oh, that sounds good, let's do the same." And maybe it's appropriate, maybe it isn't, but if they don't really ask the critical questions deeply in advance about whether and why it works there, then they could spend a lot of money and they're missing what the real problem is and maybe there isn't even a real culture problem. **Patrick Hudson:** They'd been doing these safety culture surveys and we looked at them and we thought, "Well, no wonder they're not getting anywhere, because you look at this and say, "Where do I go next? I don't know."
Can the program be tailored to suit	**SP:** I'm a little cynical on most proprietary programs. The problem with them is that they're rigid and any cultural change program	

the organisation?	has to be tailored carefully to suit the organisation.	
Is the CEO committed?		**Andrew Hopkins:** My advice on this is that details of the program are secondary. The most important thing is whether the CEO is committed to it. Does the request come from the CEO or is it coming from much further down the line? If it's coming just from the site level, then forget it. If it's coming from the CEO then that's an indication that they're serious. My advice is make sure that you've got commitment from the highest possible level within the organisation. If you haven't, then it's just not going to work, no matter the nature of the program. Is the CEO committed to it and in particular willing to make the resourcing decisions that are necessary to make it work?
Whose behaviour are we trying to change?	**SP:** The ones I've seen, the behavioural-based safety programs, drive the simple response that the managers are smart, workers are dumb; if they just followed the rules, and we can influence their behaviour by going and observing them and having a conversation around safety then they'll suddenly see the light and understand why it's so important for them to follow the rules and do what's right. But these are none of the things that I think are important from a safety perspective. To me all of those behavioural programs and the safety culture programs are just looking at the individual; they're not looking at the organisational context. **SP:** They're behaviour-based programs masquerading as a wolf in sheep's clothing, or old wine in new bottles, whatever metaphor you use. That your values dictate your behaviour is just facile, it neglects the role of environment in influencing behaviour. A culture change program is just about changing people's behaviour; it's not a culture change program. **SP:** I fear that I am one-eyed about it, but I still do find myself asking questions to find out whether the organisation that's offering the [BBS] program is just trying to change the behaviour of the individual. If I find that they're not just trying to change the individual, that they're doing it with a view to looking at groups of people and a social process, I'm less worried than when	**Andrew Hopkins:** Is the culture change program aimed at changing the behaviour of top managers as well as workers? If it's not, if it's only focused on changing the way people at the grass roots think and behave, again, forget it. Because it's top managers whose behaviour needs to be changed.

	they're doing it with an individual and they're thinking that what's inside one person's head is going to dramatically change. I am concerned when I see that it's focused on the individuals with the least chance to change the exposure to risk. So it's whether they're focusing on the worker rather than the management.	
What is the problem?	**ER:** I would talk to them about making sure you're doing this for the right reasons and that you've got your general safety obligations covered before you do this, otherwise all that it's going to tell you is what you could know by walking around your workplace and seeing that you've got guarding not addressed, etc. So make sure that you're using it at the right time I suppose. **WR:** We have no time for behaviour-based safety.	**Andrew Hale:** Analyse what the problem is in your organisation before you start looking to see what an appropriate culture change package is. You need to analyse the gaps. You need to say whose culture, why am I unhappy with what we've got at the moment, is it something where the culture needs to change or something else needs to change? So what is the appropriate target of change and how does that part of the organisation currently see its own performance, its own culture, especially when you're facing a change process where you've got strong opposition. Or is it that you think the problem is more in terms of competence and knowledge? Where does the problem lie? And then matching that with a suitable culture change program.
What do they want to achieve?	**SP:** Firstly [providers] should ask the manager what do they want to achieve, why do they feel like they need a cultural change process, what were the triggers for that? And what outcome would they like to see as a result of the culture change process? What resources are they willing to put into that? What time are they willing to put into that?	
What is the basis of the program?	**SP:** And then from the provider, I expect them to talk to managers about the basis for their program. What is the program based on? What are the outcomes that the program will achieve? What is the consultation communication method? How flexible is it? What level of the organisation is it aimed at?	
Can be useful	**SP:** I have used them. I think some of those are good tools. So the thing about proprietary products is that you've become dependent on a third party, and ultimately that's very useful if you need a kick to get yourself going. **SP:** Definitely, they're [safety climate surveys] a very useful metaphor because they provide a veneer of scientific reliability to what's not a scientifically valid concept. I use them often, but I'd only ever use them in the context of qualitative data collection. We'll	

	also interview people. And I do find getting the statistical data as well quite useful. So that reinforced for me the value of the surveys, not on their own, but in the context of triangulation, it can be quite helpful. Certainly from a polemic point of view it was very handy to have that quantitative data as well as the qualitative data. Don't bother spending your money buying a proprietary survey. There are plenty of surveys out there and questions that you can use that you don't have to pay for. What's important is to talk to people.	
How will the program be introduced?	**WR:** Unless there is full, open and honest discussion involving workers and their representatives about the program then it will always be an imposition… anything that's imposed always fails. So the first thing will be not so much the what, but the how.	
What will the organisation do with the results?	**ER:** Whether it's a safety climate survey or just a general employee opinion survey which has got safety as part of it, it's what you do with the results that makes the difference. Do you take the results and go out and do something about it or do you, as I've seen a couple of organisations do, take the results and rationalise why it really isn't a true outcome. It comes down once again to the genuine intention of doing the survey, whether everyone is on board, what management is going to do with the results and whether it gives them something meaningful.	
Who is the best person for the job?		**Dov Zohar:** I'd say you can choose a consultant who claims lots of success, which may be true, but there's no evidence, scientific evidence that that's true. Versus a scientist who may have a lot less experience in the field, but he or she follows scientifically based methodologies and data collection methodologies and so on. You make the decision. That's what I do when I'm being approached every once in a while for consulting jobs. They say, you know, we could get it elsewhere and I make the distinction between practitioners versus scientists. You have to make the decision.
Will it build dignity and respect?	**SP:** It doesn't matter what you do as long as how you do it is about building the kinds of values that we know check people. It's about asking the questions, "Will this build dignity and respect in our workplace?" So in a sense it doesn't matter what tool you use, and you can	

	use a shiny, off-the-shelf thing if it makes people feel more comfortable in the organisation, as long as it's applied with dignity and respect, giving people the opportunity to grow and develop at work, helping people see how things might be different within the organisation.	

Appendix M: Exposing cultural myths

Themes	Industry	Researchers
Culture is an add-on		**Andrew Hopkins:** One of the myths is that culture is a kind of add-on. I don't think culture is an add-on. Culture is the way we do things around here. People often say it's an add-on because procedures and systems are not enough. What additional magical ingredient do we need? It's culture.
That culture is organic or imposed by leaders		**Andrew Hopkins:** Another myth, there's some sort of debate which seems to be a bit misguided, about whether culture is organic to the work group or can be imposed from the outside by leaders. A lot of literature takes this as contradictory positions – that culture is either organic to the workgroup or it can be imposed from the outside by leaders. I think the resolution is simply to say what do we mean by culture? It's the way we do things around here. Okay, where does this come from? It may come from the work group. It can come from the outside if leaders are sufficiently consistent, then it will happen. It's a myth that is widely propagated. I think it is a dangerous myth.
How we currently study culture may be misleading or unhelpful		**Andrew Hale:** My point about my ethnographic approach is that it can perpetuate the idea that culture is really not changeable. I mean that literature is very descriptive and not related to change. I suppose the other point was about the other end of the spectrum that is the attitude survey literature, which pretends that it can tell you everything you need to know about safety culture, when it doesn't really dig deep enough.
There is one culture	**SP:** I think there's a myth that exists that there is some amazing ideal model of culture that you can apply that will produce this wonderful safety culture.	
All this is new	**WR:** There is a myth that somehow this is all new.	
The behaviour of workers will change culture	**WR:** That it's the behaviour of workers which will change culture. Behaviour-based safety and culture are often used interchangeably or a proxy for one another. It's a myth that if you want to change the culture, you need to change the behaviour of the workers, and that's a culture change program.	
Culture prevents accidents	**SP:** The whole concept of 'safety culture prevents accidents' is just a flawed concept. The safety culture doesn't prevent accidents.	

	The people who are doing the work and the resources and how we set up work is what will prevent the accidents from occurring.	
Safety inhibits production	**SP:** That safety inhibits your production and schedule, those sort of myths, they get thrown up at you still. That idea that safety perhaps doesn't contribute to the bottom line. I think that's a myth that is certainly not true. I think safety professionals need to be a bit cleverer in pitching how their programs can actually help improve the bottom line, so you debunk that myth immediately. **MG:** The myth that there is a conflict between meeting budget requirements and time pressures, and not hurting anyone. I think we've been able to demonstrate quite clearly in the organisation that having a schedule to meet as well as doing it safely aren't in conflict with each other.	
The safety department will fix everything	**SP:** The belief that the safety department will fix everything for you and the line guys don't need to do anything. I think that's something that is certainly not true. The safety department is totally ineffective without line management support.	
Safety first	**ER:** One of the things that concerns me in the whole culture debate is that whole 'we're committed to safety and we put safety first.' Because I don't think business goes into business for the purposes of safety; they go into business for the purposes of making money and safety should be part of how we do everything around here. We should think about safety with everything we do, but I'm really sceptical of organisations that say we put safety first.	
Consulting companies are doing scientific work		**Dov Zohar:** What's perpetuated here is the belief that we, the consulting company, are doing scientific work.
The organisation is only one thing	**SP:** I like the metaphor of collage, in that organisations are lots of different things depending on what model you use, and the interesting questions are around how the organisation defines itself and aspects of it. So I'm not sure, I suppose the myth that the organisation is only one thing or the other.	
You can't change people	**SP:** One of the biggest myths I think is that you can't change people.	
It's impossible	**SP:** The other one is people say it's impossible.	

Individual responsibility	**WR:** The individual focus and not seeing stuff as part of a systemic way of doing things. The fundamental one about the individual. It's coming back, it's got a resurgence. It doesn't talk about the careless worker, but it's in 'individual responsibility' and 'everybody has a role' and 'everybody has a responsibility.' Those sorts of terminologies, which in practice mean, well it's your fault.	
What interests my boss fascinates me	**SP:** It's getting to the point where it's approaching a myth, isn't it? It does cast a view of the organisation being so top-down.	
Zero harm	**SP:** I think the one that's always the challenge is this whole idea of a goal of zero harm, and whether all injuries are preventable. There are people in organisations we deal with who refer to it as 'that stupid saying,' so I think they would say it's a myth that they can achieve it. So why have a goal you can't achieve?	