Producing Safety: evaluating structuration theory as a framework for exploring the values in action within the Civil Construction Industry in WA

Susanne Bahn

Dr. Llandis Barratt-Pugh

Edith Cowan University
School of Management
Churchlands Western Australia

Ph   +61 8 9448 9512
Mob   +61 0 408 882 353
Fax   +61 8 9203 7379

Email:

l.barratt-pugh@ecu.edu.au

sbahn@kissafety.com.au

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Suzanne Bahn and Llandis Barratt-Pugh
Edith Cowan University

Abstract

In this paper we argue that occupational safety and health (OS&H) in the workplace is a production of values in action. We propose that such relations may best be explored through the structuration lens generated by Giddens (1984). We both use structuration theory to conceptualise the relations that produce safety and evaluate the utility of the theory as a research framework. We provide a detailed discussion of the context of, and rationale for a proposed study. The paper then analyses the components of structuration theory and frames the production of safety within these conceptual relations. The paper argues that the modalities that occur in the continuing practices of organisations are a complex and homogeneous mix that continuously shape and reshape safety values in actions. Through this analysis the paper identifies a 'cycle of abuse' that is occurring within this industry and concludes with a discussion of possible research interventions that could mediate such practice and the reduction of workplace accidents. Finally the paper reviews the utility of a theory generated as a broad sociological explanation two decades ago as a framework for current organisational investigation. This paper models the discursive cycle of abuse that generates unsafe practice, indicates the value of a specific research study, and illuminates the efficacy of structuration theory within organisational research.

Key Words: *Safety, Values, Structuration Theory. Research Methodology*

Introduction

The production of safety as a managing responsibility is enshrined in legislation and regulation. However, bare statistics inform us of the human costs that can occur when these values are contested, by the many and conflicting discourses of production in our daily workplace practice. From our perspective, the production of unsafe practices is a very stark reminder that the discursive struggle of organisation is a continuing conversation with real implications for organisational actors. Our proposal is that the investigation of such relations is warranted because of their intense and significant social impact. In common with much research into organisation our study involves the exploration of the dissonance between the discursive statements and the physical practice, or the rhetoric and realities of organisation (Legge 1995). To us, organisation is a discursive struggle to assert specific meaning and mediate subsequent actions. These actions can have a very real cost for organisational actors.

This paper explores working and learning practices in the context of safety within the Civil Construction Industry (CCI) and specifically focuses on the relations between organisational values

and working practice. We propose that a specific investigation of this context using the theoretical frame of structuration theory will be productive and contribute to our understanding of organisational relations.

The production context

The CCI is a unique industry standing apart from the commercial and building industry in that the work done is considerably different. Where commercial construction builds large commercial buildings such as office blocks and hotels, and the building construction industry builds houses, the CCI builds and maintains the roadways. The industry builds railways, bridges, and new land sub divisions: placing signs, guardrails, pouring asphalt, kerbing, brick paving, installing drainage and street lights. An important structural component of this industry is its contractual nature and this is exacerbated by an increasing sub contracting nature. In addition the industry is characterised by the location of the work being continually varied and determined by the contracting nature of the industry. Finally the industry production is based upon workers operating heavy equipment on a daily basis often with minimal formal skills training.

From a workplace point of view the 'cycle of abuse' for workers in the CCI appears to be a never ending one. The skills shortage and continuing construction boom in Western Australia has placed increased pressure on the safety culture in these workplaces. The CCI, being one of a contractual nature, is under pressure to perform at both a competitive and accelerated rate, while at the same time comply with legislation to reduce the accident/incident rate of workers in their industry. Managers have a set of continually evolving and competing values that influence and determine their relational impact upon workplace safety culture. They mould and modulate employee attitudes to safety at work through formal and informal interactions. But often the 'training' workplace culture is at odds with the practice of workplace culture. While OS&H principles should be embedded with high value within workplace practices, in practice their application is contested by the competing values of work production. Compliance to legislation and regulation of practices for the production of safety is a discourse that confronts work production. Legislative action has been taken to address imbalances

within the associated industries by introducing tighter laws and guidelines for employers to follow (OS&H Act 1984, OS&H Regs 1996, National Standard for Construction Work ASCC: 1016, 2005). The problems and manifestation of the duality of social cultures, as modeled by Giddens (1984), where social practices are continuously replicated unless local agency and specific initiatives challenge existing social values, institutions and behaviours is reflected within this industry. Current practices are continually replicated unless an instrumental manager or group of managers decide to 'buck the system' and initiate changes in rhetoric and changes in practice. While powerful mediators of workplace practices, managers are themselves the subject of conflicting discourses. They are jostled by the continual talk and rhetoric of organisation, which they may resist, incorporate or become subject to. They are produced subjects, and in turn, their subjectivity or values are placed into action to shape working practices.

In this paper we define discourses as the beliefs, knowledges and relations promoted by specific groups. They indicate how individuals should be in the world, what they should think and who they should relate to. Discourses are interrelated texts and practices that bring an 'object into being' (Hardy et al 1998). Discourses are never benign and always seek to enroll individuals, privilege specific authors, promote consumption, produce identity, and displace competing views of the world. They both produce a discursive representation of how life should be and produce discursive constructions that mediate reflection and reflexive practice. These representations, of managing and learning embody a 'hegemonic struggle for space' (Brown & Humphries, 2006). Discourse in the form of text is represented in the accident/ incident statistics collected from organisations by the regulating body.

WorkSafe WA has identified that lost time injuries and diseases (LTI/D's) involving workers in the construction industry are twice that of the national average and 20% more than that of the mining industry which operates similar heavy machinery. These statistics encapsulate activities throughout the commercial construction industry as a whole; there are no stand alone statistics available for the CCI itself. The table following shows the overall Work Related Injuries and Diseases in WA in the Construction Industry over a period of five years, 1998 – 2003. Statistics for 2004 are not yet

available; but it could be assumed the trend will remain the same. LTI/D's[1] represent the Lost Time Injury and Diseases[2] that occur in the workplace and require days off work. It can be seen from the table following that although the overall frequency of injuries and diseases that occur in the construction industry each year have decreased since 1998, injuries that require more than sixty days off work for recovery have not significantly decreased. The average duration time to recover from an injury or disease occurring in the workplace in the construction industry has risen considerably in recent years. This indicates that the current OS&H practices are not making a significant impact on the frequency of injury and disease occurrences in the construction industry.

Table 1: Work Related Injuries & Disease in the Construction Industry in WA, 1998-2003.

Work Related Injuries & Diseases in WA – 1998-1999 to 2002-2003 Construction						
Year	LTIDs	Frequency 1+ days	Frequency 60+ days	Incidence 1+ days	Incidence 60+ days	Average Duration
2002-03	1868	18.9	4.8	4.0	1.0	-
2001-02	1906	19.3	4.3	3.9	0.9	83.6
2000-01	2203	21.8	4.0	4.4	0.8	76.2
1999-00	2738	26.1	4.4	5.4	0.9	69.9
1998-99	2943	35.5	5.5	6.9	1.1	62.7

(WorkSafe WA 2005)

The Cycle of Abuse

Clegg (1975) compares 'power' within organisations to that of an 'ongoing game of chess' where the players in the game or the employees in the workplace are simply pawns to those who have the power or are in authority. The model following illustrates the potential 'cycle of abuse'. Managers have a set of continually evolving values in action that influence and may determine the subsequent workplace safety culture. There are external pressures that influence these values. These include the construction

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[1] LTI's – Lost Time Injuries are injuries that require more than 3 days off work for recovery.
[2] Workplace Diseases in the construction industry include asbestosis, cement dermatitis, and coming into contact with hazardous materials and liquids.

boom and skills shortage in WA that has led to contractors under pressure to perform at an accelerated rate; price competitiveness in the marketplace to 'bring the job in on budget and on time' and legislation compliance issues. In order to cultivate the desired values in the workplace managers offer formal training to 'mould' the employee. The individual attitudes of the employee are influenced by this training and that of the current workplace culture (informal training); do they walk the talk? The values become incorporated into the culture. The employee's identity is mediated in that they resist, incorporate or comply with the training received and the current safety culture. The individual in the workplace consumes significant discursive material and produces specific values about working practices which are performed in the workplace through day to day relational decisions and reactions. The practice of these values and the observation of other values in action further mediate the individual's safety beliefs. This leads to the 'actual' values in action exhibited within the workplace. The accidents and incidents that occur affect management values and so the cycle continues.
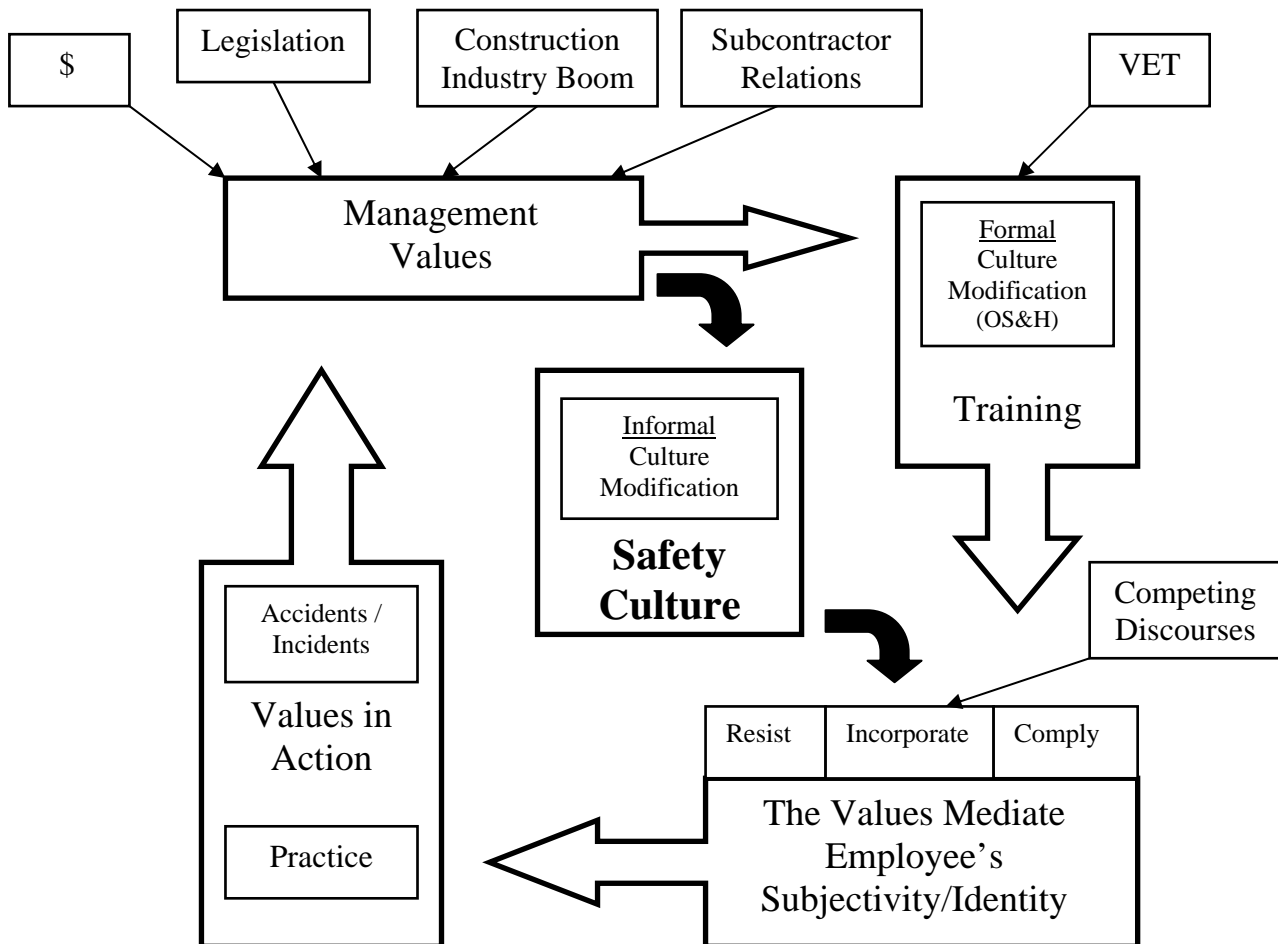
Figure 1: Cycle of Abuse

Pressure for production within the Western Australian construction industry has not abated; with the State's economy booming and forecasts that it will continue to boom for several years to come.

Legislation and VET are trying to cope with the pressures from governments and the public to introduce more safety legislation and insist on compliance to tougher OS&H laws (OS&H Regs 1996) as well as more comprehensive training with a focus on safety to reduce the rate of accidents/incidents in the workplace.

WorkSafe WA has begun to address the safety issues when working in the construction industry by introducing the 'Green Card[3]'. With the introduction and mandatory compliance of the Green Card in the construction industry in Western Australia, safety inductions will become a pre-requisite to working on a construction site (from 1st January 2007, all construction workers must hold a Green Card). Where the Green Card ceases in its effectiveness is the lack of compulsory observation of whether the tasks that are performed by the worker are in fact carried out in a 'safe' way. Certificates of Competency to operate heavy machinery and Competency Assessments are lacking in the industry. Skills and competencies are rarely revisited or checked to see that they are being maintained, particularly in the area of safe work practices. At present the only compliance mandate is that the Green Card must be renewed every three years. This renewal has received considerable vocal criticism by the housing project builders in WA, their trades people and the Housing Institute of Australia. The view within the building industry is one of 'skilled for life' once a trade certificate is gained and any revisiting of their skills and competencies is viewed as an insult and a threat.

The Construction Industry's negative view towards continued training throughout a tradesperson's working life appears to be at odds with the study conducted by Smith et al (2003) which showed that organisational change in the workplace was a major driver of enterprise training and that businesses in Australia and worldwide were still in a state of evolutionary and continuous change, with no sign of this abating. They found that encouraging employers to invest more money in training was not an issue in medium to large enterprises. This attitude does not appear to be embedded in the CCI, possibly because this industry consists of many smaller businesses subcontracting to the larger civil construction contractors. Size has been quoted in past research as a major determinant of the level of training activity in organisations (Cappelli & Rogovsky 1994, Osterman 1995, Bishop, 1994). Holmes (1999) cited in Lin & Mills (2001) conducted research from a sample of Australian companies and found that small construction firms may not manage OS&H risks as effectively as large firms (Wilson

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[3] The Green Card Safety Induction run by the various RTO's asks the worker to identify the known hazards, assess the risk and have in place control mechanisms to eliminate or reduce the risk to an acceptable level. Renewal of the Green Card is achieved by attending the repeated safety induction course every three years.

2000, Lingard & Rowlinson 1994, Hale & Baram 1998). The majority of Australian construction firms are small businesses with 97 per cent of general construction businesses employing less than 20 employees and 85 per cent less than five people (Worksafe WA 2005).

Mason quoted in Paton (2005) stated that large construction companies are beginning to adopt some OS&H practices but 'the construction industry is like the final frontier when it comes to addressing the health needs of workers' and that 'most small companies simply do not come into the equation'. It is common practice for sub contractors to discount their jobs to win work through the tender process. Hinze (1988) cited in Lin & Mills (2001) found that injury rates tended to be higher on those projects that were competitively bid. Safety is often the first consideration to be neglected in the race to bring the job in on budget and on time.

There has been some research to identify organisational values. Rokeach (1973), Schwartz (1992) and Bernstein (1986) have all developed standard lists of organisational values. Cameron & Quinn's (1999) 'Competing Values Framework' and 'Organisational Culture Assessment Instrument' can be used to identify the organisational profile based upon its 'core' values. More recently van Rekom et al (2006) have narrowed down these lists in an effort to assess 'core' organisational values. Although these lists and the framework are important when examining workplace values none of the values identified incorporate or acknowledge the need for *safety* values in the organisation. This study will explore the safety culture in the CCI, and whilst acknowledging the importance of these lists, will not use them as a data collection framework.

Nishgaki (1994) cited in Lin & Mills (2001) suggested that the major causes of OS&H failures are: inadequate safety education, inadequate instruction, poor housekeeping and 'willful transgression'. This study aims to investigate the safety values that underpin the OS&H practices in the CCI that leads to this 'willful transgression' and will encourage a positive safety culture to be embedded as the desired workplace behaviour. Lynch (1997) cited in Iacuone (2005) studied larrikinism in the NSW's construction industry. He identified two different types of masculine behaviour evident in the industry (this industry is predominantly male): 'protest masculinity' and 'complicit masculinity'. 'Protest

masculinity' (Lynch 1997) or 'willful transgression' (Nishgaki 1994) manifests itself as larrikin-style behaviour on a construction site. 'Complicit masculinity' is more associated with domination via institutional power and white collar workers. Benyon (1973) cited in Lin & Miles (2001) found that young men's machismo behaviour created life-threatening situations. 'There is a belief that men need to be tough and should not be afraid to partake in physically demanding tasks… and need to embody a daredevil attitude' (Lin & Miles 2001). Hansen (1988) and Smith & Kirkham (1981) found that neurotic or extraverted individuals are more likely to be involved in workplace accidents/incidents than those individuals who do not display these traits. They found that the link between extroversion and 'accident proneness' was supported empirically; whereas the link between neuroticism and 'accident proneness' was supported only in cases of advanced neuroticism (Watson et al, 2005).

A further explanation for ongoing training receiving little support in the construction industry could be that the industry views training as a reactionary need, training is only supported as required when change determines the need. This is a short term attitudinal approach toward training (Finegold 1991). The driver for a change in this attitude may need to come from the civil construction businesses themselves as they contract the work out to their sub-contractors and therefore are at liberty to set the safety standards. There is a need for a number of civil construction businesses to be identified as 'best practice' organisations in order for the remainder to benchmark their standards against them (Jaselskis 1996).

We are currently involved in a collaborative research relationship with the industry to investigate the relations between organisational values and practices in the area of OS&H in the civil construction industry in WA.

The practical aim of the study is to illuminate initiatives that may reduce the accident/incident rate. The academic aim of the study is to examine how the discursive actions of organisation mediate and produce safety in the workplace. The study explores the relations between organisational values and organisational practice. That is; how OS&H values are constituted, distributed and enacted in practice

within organisations. In order to frame the research Structuration Theory, Activity Theory and Integration Theory have been selected as the research methodology. This paper explores the relevance of Structuration Theory as an analytic tool for research within organisation. Although theory was conceived two decades ago it marked a significant fusion of polarized and parallel modes of social investigation. We will explore the theory, it's specific use as a framework for exploring the production of safety and continuing relevance for organisational research.

Structuration Theory as a Research Methodology

Structuration theory is a theory of social change focusing upon the relations between reified structures and individual actions. It provides a theoretical framework that can be used to analyse 'organisation' at the micro-business level and underpins much of the theory about 'culture' that has influenced organisational analysis over the past two decades. It is both a theory about how people behave within organisations and a theory about how organisation is formed. It therefore provides an appropriate theoretical basis for developing an understanding of the relations between discursive announcements and behaviours in practice, or values placed into action. Giddens (1984) provides a perspective that views the organisation as a series of interlinking cogs, in motion and in tension, always structured but always changing, reproducing values in action, but mediating and re-authoring those patterns of practice. The theory has been widely critiqued and often criticized (Adam 1992, Clark et al 1990). Before relating the theory to our specific case and application it is necessary to explain the conceptual relations that Giddens (1984) explores. In terms of culture it is a theory that gives hope. We can change, and be instrumental in changing our organisations.

Structuration theory was developed by Giddens (1984) during the early 1980's. It provides a structural framework to explain the conditions that govern the continuity and change within social structures, and therefore maps the reproduction and development of social systems. Giddens (1984, p.xix) describes structuration as a social theory constructed after the post-empiricist linguistic turn of social analysis. He largely rejects Freudian explanations of social interaction solely focused on the subject and the unconscious, insisting on the centrality of socio-cultural agency and self as a conscious reflexive

process (Giddens 1984, p. 42-44). Gidden's framework also appears to reject the totality of Foucauldian perspectives of power that discipline the body in time and space, removing agency (1984, p. 32). At the core of Gidden's theory lies his thesis that the polarisation of society and individual actors is an *erroneous dichotomy*. Far from a duality, Giddens asserts that a *dualism* exists where continual social interaction both constitutes and is constituted by social structure. Structure and social action mutually mediate and constitute each other. As structure acts to shape action and practice re-shapes patterns of structure. The patterns of social practice are a social construction that we view over time, and reify as structure. His purpose is to provide a framework that neither starts from, nor privileges, the subject or society, but reconciles such binary positions by presenting this duality, as a dualism. A dualism where freewill and determinism are viewed as continually at play, through process and product.

This framework de-thrones the concept of structure as some immutable reified construct that is external to us, and to our actions. Social structure is viewed as a concept that is formed through the reproduction and reoccurrence of social patterns, and is embedded within organisational context. This duality of structure insists that social structure both mediates social actions and is formed through those actions. It is our social actions that are the medium of structural reproduction and visibility, but they are also the agency of structural change. According to Gidden's theory, the structural properties of social systems, the patterns of social action, are both the medium of social reproduction and the outcome of social performance, creating the 'notion of duality of structure'. While attempting to place structure and agency in balanced tension, Giddens has been criticised for giving primacy to, and having an unintended bias towards, agency (Bryant & Jary 1990). We intend to note such criticism as a potential limitation, and focus on exploring the functionality and application of the framework.

Giddens' model of structuration is dynamic, and based on three key features, that should be viewed as interrelated and not separate components, that are mutually mediating and continually in tension (see

Figure 3). First, there are the *structures*, the structural properties of the organisational social setting[4]. These are properties created by regular sustained interaction or agency, not isolated social performance, and form the rules and patterns that bind social systems through time and space. Second there are the interactional *systems*, performed by human activity, the relations of organising as social practice. The observable patterns of practice and relations occurring between individual and group based networks. *Social structures* seek to mediate these *systems of practice* through resource authorisation and allocation (human and material), as well as coercion and inducement. Third, there are the *modalities* or meaning generating processes that mediate the generation and reproduction of relatively similar social practices across time and space. They are the bridge between the acts of social action, and the patterns of social structures. However these modalities not only enable the repetition of patterns of practice but enable subtle changes and variations in practice that then change those very structures that are being reproduced. An analysis of the structuration of a social system entails examining ways systems are produced and reproduced, through cycles of social interaction, *privileging neither* social structure nor human agency.

> *....constitution of agents and structures are not two independently given sets of phenomena, a dualism but represent a duality.*   *Giddens 1984, p. 24*

Giddens indicates that from this perspective the *production of social action* is synonymous with the *reproduction of social structure*, and they inhabit each other. Social structure cannot be considered as separate to social performance. Human agency continually produces and reproduces social structure. Structure does not exist without human agency, for it actually exists, and is embodied, within each actor. Structure and agency are not a polarised binary duality, but an inseparable cycle of re-production. Structures and systems are reified over time. The discursive replication of such abstract concepts objectifies them, but they only continue to exist if they are continuously reproduced. In structuration theory the agent or human actor is viewed as discursively knowledgeable, a conscious actor with the capability to reflexively monitor social activity. Agency is the power of human actors to
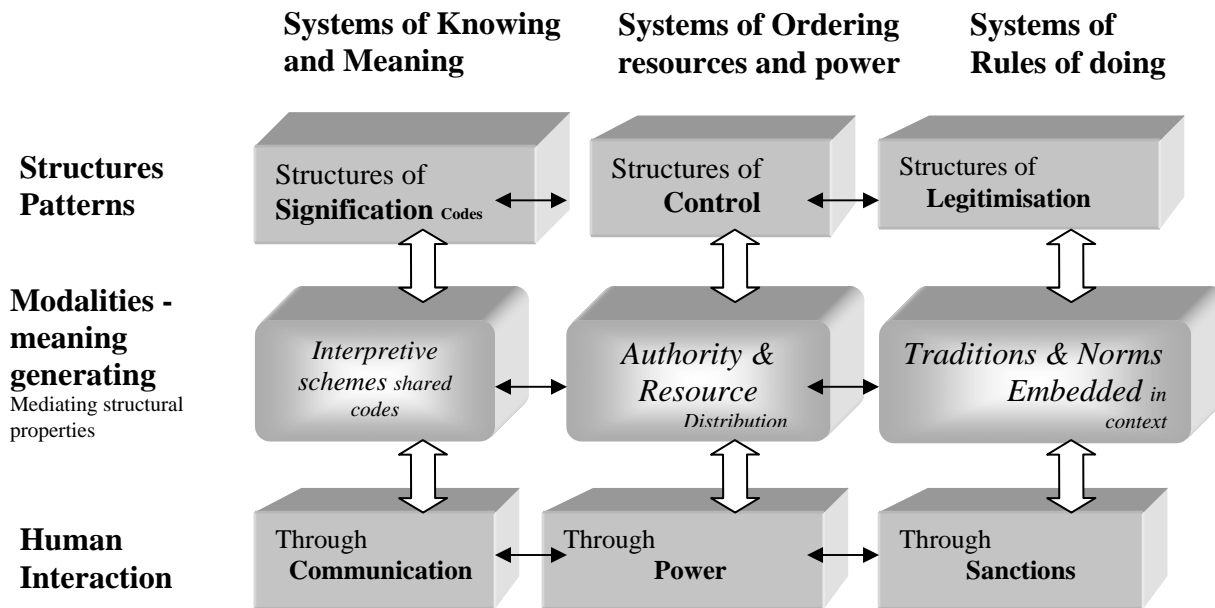
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[4] In the doctoral study the focus is upon organisational relations. Gidden's theory was of course more widely proposed as an explanation of social change rather than just organisational change.

operate, at times, independently of the determining constraints of structure. The domination of structures is always an incomplete project, and inevitably there is space and opportunity for alternative practices. Interaction within social networks can therefore only be understood in terms of both historical and current structures mediating social action. Giddens (1984, p. 2) presents an argument that:

> *Human social activities, like some self-reproducing items in nature, are recursive. That is to say, they are not brought into being by social actors but continually recreated by them via the very means whereby they express themselves as actors. In and through their activities agents reproduce the conditions that make these activities possible.*

Each of the three key features of this dynamic model, structure, human action, and modality, are segmented by Giddens into three component properties, which together form an interactive and integrated framework. These component properties fall into three grouped systems of knowing, of ordering, and doing. Structure is viewed in terms of component systems of signification, control and legitimation. Social action is viewed in terms of systems of communication, power and sanction. Finally, the modalities that link structures and human action, are viewed as interpretive schemes, rules, resources, and norms. These modalities are accessed by human actors to recursively link structures and human action, to reproduce and modify systems of interaction, through the component relations indicated in the figure that follows.

In Structuration theory, organisational practices access the modalities or interpretive schemes of the organisational structure to form enduring and changing structural patterns. These structural patterns in turn mediate the form of subsequent organisational practice in a continuous cyclical process. Giddens (1984) asserts that this cyclic pattern involves three interrelated component systems, that continually attempt to, establish meaning, order relations, and delineate behaviour patterns.

	Systems of Knowing and Meaning	**Systems of Ordering resources and power**	**Systems of Rules of doing**
Structures Patterns	Structures of **Signification** Codes	Structures of **Control**	Structures of **Legitimisation**
Modalities - meaning generating Mediating structural properties	*Interpretive schemes shared codes*	*Authority & Resource Distribution*	*Traditions & Norms Embedded in context*
Human Interaction	Through **Communication**	Through **Power**	Through **Sanctions**

Adapted from Giddens 1984, p. 29

Figure 2: Dynamic components of structuration theory

In Giddens' duality model, the *modalities* are both a production of systems and a reproduction of structures. They are the knowledge resources that social actors access to enact social performance. The three interrelated dimensions are focused upon issues signification or meaning making, issues of power and control, and issues of regulation (Giddens 1979, 1984)
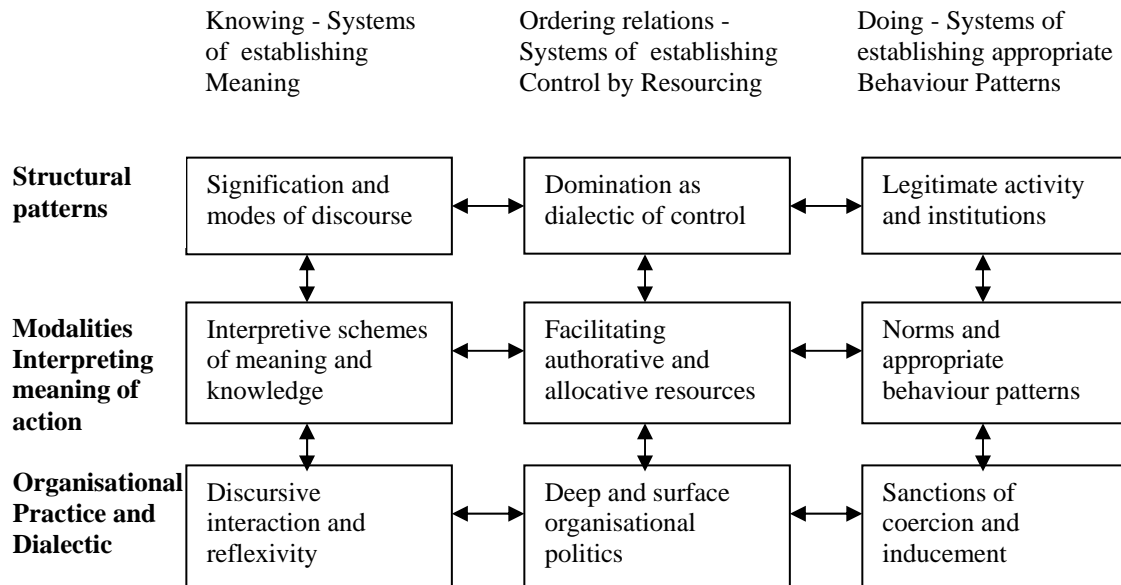
In terms of *signs and communication*, social actors draw on the sources of shared or mutual knowledge to construct meaning. Shared meaning is integral to the production and reproduction of social interaction, which is itself shaped by each interaction. Social actors use the rules and codes of interpretive schemes to make sense of new or changed situations (Cohen 1989, p. 27).

In terms of *control and power*, social actors draw upon authoritative and allocative resources to respectively generate control over people and objects (Giddens 1979, p. 100). Power is mutually vested in the institution or individual, but structures of control have *transformative capacity* over organisational actors through the consistent allocation of resources (Giddens 1979, p. 93). While there

is a fundamental relationship between actors and power, control is not absolute, and alternative action is know as the *dialectic of control* (Giddens 1979, p. 6). Control is never absolute in any system, and systems must engage in debate about degrees of application, limits of discretion and adaptation to new social circumstances, changing the 'rules'. Frost and Egri (1991, p. 231) described politics as 'power in action' and suggest that actor performance may involve surface and deep political action that are reciprocally interactive.

In terms of *legitimisation and sanctions*, social actors draw upon rules and normative practices that govern legitimate social practice according to different contexts. The values and goals deeply embedded in structure are articulated as rights and obligations. Rules define normative practice and mediate appropriate performance through sanctions and inducements. Legitimate social performance is often articulated and sustained through orchestrated socialisation, or the rituals, rites and ceremonies of tradition. In this way, social performance broadcasts preferred behaviours and enculturates acceptable practice.

The recursive relationship being acted out between structure and systems through the modalities is not the only relational balance in the model. There is a similar and continual pattern of reinforcing relationships between the three major constructing social practices themselves (meaning making, control and regulation). Asymmetrical relationships exist within and between sanctions and resources (Cohen 1989, p. 27/28). The mobilisation of resources in a social system involves practice that is both normative and follows existing codes of meaning. Rules not only sanction conduct but themselves also constitute meaning. Structures are sustained through the mutual interaction of resources and rules and without this recursive regeneration they would over time disintegrate and cease to exist (Sewell 1992, p. 13). In organisational terms the relations are configured as in the following figure.

Knowing - Systems of establishing Meaning | Ordering relations - Systems of establishing Control by Resourcing | Doing - Systems of establishing appropriate Behaviour Patterns

	Knowing - Systems of establishing Meaning	Ordering relations - Systems of establishing Control by Resourcing	Doing - Systems of establishing appropriate Behaviour Patterns
Structural patterns	Signification and modes of discourse	Domination as dialectic of control	Legitimate activity and institutions
Modalities Interpreting meaning of action	Interpretive schemes of meaning and knowledge	Facilitating authorative and allocative resources	Norms and appropriate behaviour patterns
Organisational Practice and Dialectic	Discursive interaction and reflexivity	Deep and surface organisational politics	Sanctions of coercion and inducement

Based on and adapted from Giddens 1984, p.29

Figure 3: Dynamic components of structuration theory in organisational terms

Framing the production of safety

Safety is a socially and discursively constructed concept within organisation. It is the transience and variability of the values constructed that mediate the production of safe and unsafe actions, and their physical, psychological and social consequences. The CCI participants are social actors who bring into the workplace their own personal values. These values affect the culture and in turn are affected by the culture in which they work. These values are forever changing and reproducing through discussions or modalities as these social actors conform and comply or change the environment and people in whom they interact.

Placing the lens of structuration over the issue of workplace safety illuminates the following relations. In organisation, *structure* exists through performativity. Only where safety practice is continually reproduced do repeated patterns form the reifications of a 'safe culture'. Boundary-spanning managers may develop alternative systems of signification for workplace safety practice. Workplace dialectic about safety examines and mediates existing practices. Knowledgeable managers engage the modalities of signification with vigour, confronting existing signification, mediating existing patterns to establish new legitimate practice. The interpretive schemes are strongly mediated by these

discontinuities and alterative discourse. Where such dialectic is absent there is no contestation and often practices mutate in their reproduction. In active performances, safety becomes a conversation, an agenda with roles, contractual relations and a defined language with inscribed practices. Safety practices become the language of work and safety becomes a functional code that produces safe practice.

In terms of *ordering*, the production of safety demands the recruitment of powerful and authoritative managing actors. Their discursive action links into existing agendas secure symbolic and substantive resources, confronting the modalities of ordering, and promoting the values and practice of safety, thus creating enduring patterns. Meaning is *translated* into local action, values are reproduced in practice.

In terms of the *systems of legitimisation*, safety is produced where there are asymmetries between resources and sanctions. It must be easy to be able to do safe practices and there must be implications for not reproducing such practices. Interpretive schemes that enable safety dialectic provide organisational space to contest and displace existing practices.

Safety Values

Structuration theory illuminates the relations between discursive action and establishing patterns of practice, or values in action. We increasingly live within an organisational society (Giddens 1984, Clegg et al 1996). Organisations generate local cultures through continual interaction and action of their employees (Morley 1991). These local or organisational cultures consist of ethical values that influence directly the personal work attitudes and behaviours of these employees (Ferrell & Gresham, 1985; Hunt & Vitell, 1986; Hunt, Wood, & Chonko, 1989; Trevino, 1986; Trevino, Butterfield, & McCabe, 1998; Valentine, Godkin, & Lucero, 2002; Wotruba, 1990). The organisational culture includes "the common set of assumptions, values, and beliefs shared by organisational members" (Trevino, 1986, p. 611). These "corporate ethical values are considered to be a composite of the

individual ethical values of managers and both the formal and informal policies on ethics of the organisation" (Hunt et al., 1989, p. 79).

Moving the argument into the realms of safety in the organisation Gherardi & Nicolini (2000) view safety as a competence that is 'realised in practice, and embedded in values, norms and social institutions'. They state that 'safety is knowledge that is objectified and codified in expertise that circulates within a web of practices'. Gherardi & Nicolini (2000) found that there is a misconception of the notion of safety culture in that 'safety culture is not something possessed by an organisation' but it is in fact an 'organisational act' (Gherardi 2000, p11). They also argue that the 'everyday activity in organisations is constituted by plurality and conflict, rather than by consensus and the sharing of projects, ideas and values' (Gherardi 2000, p11). From this they concluded that 'learning safety means how to behave as a competent member in a culture of safety practices' (Gherardi 2000, p11). This study recognises that the term culture is by definition an account of the majority experience and excludes a wide variety of more extreme or hidden practices.

The role of the safety climate within an organisation was investigated in research conducted by Zohar (1980). Safety climate is the reflection of an employees' perception about the importance of their own safe conduct in the workplace. Zohar argues that the safety climate revolves around the employees perception of the importance of the safety committee, safety training, the required pace in which to work and the status of the safety officer. In a further study that looked at managerial behaviour in the form of safety related feedback Zorhar (2002) found that as safety goal interactions increased the employees perception of the safety climate within their organisation improved. This led to specific safety behaviours increasing and injury rates decreasing. This is further supported by O'Toole (2002) who found that employee perceptions of their workplace safety system was linked to management's commitment to safety which determined the accident/incident occurrence rate within the organisation. Watson et al (2005) in their study with steel workers in the US found that 'the degree to which employees believed that management is truly committed to safety was significantly related to the degree to which they engaged in behaviour that would put them at risk of an accident' (Watson 2005,

p315). Geller (1990) argues that rewards and sanctions that enhance safe conduct within the workplace allow management to demonstrate a visible commitment to safety and this in turn 'modulates' (Giddens 1984) the safety culture within the organisation.

Gee (1996) and Schein (1965) argue that it is discourse and words that are instrumental in changing actions, beliefs and behaviours; that society patterns are formed and replicated by language. Language, whether delivered verbally or in print form, or together with actions and pictures reshapes social pattern. The model following illustrates this concept.
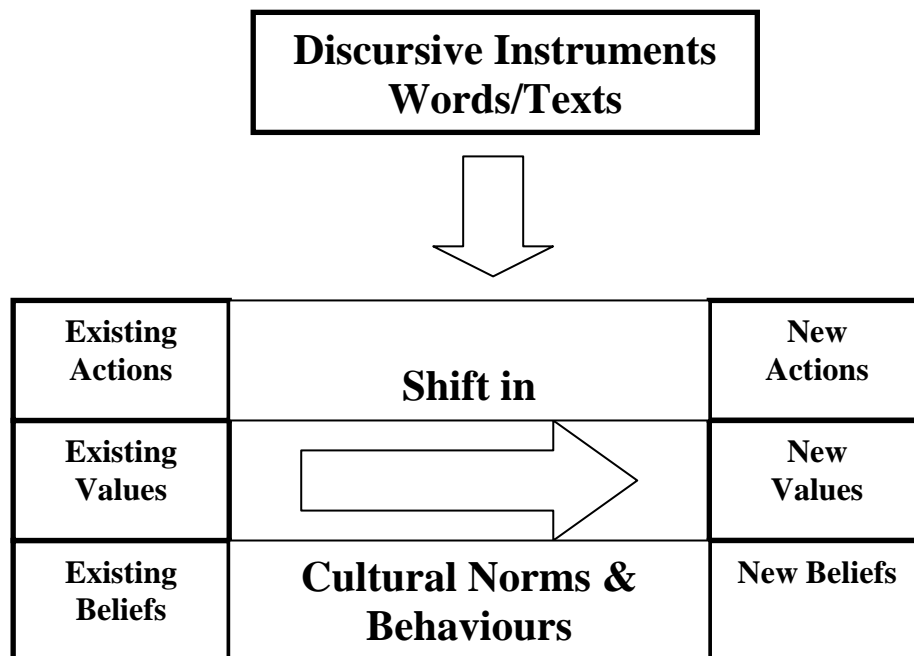
Discursive Instruments Words/Texts		
Existing Actions	Shift in	New Actions
Existing Values		New Values
Existing Beliefs	Cultural Norms & Behaviours	New Beliefs

Figure 4: Words Change Behaviours

In order to make these behavioural changes in the CCI a variety of discursive instruments are used. Words appear in legislation, policies and procedures, company values, workers compensation guidelines and in training and coaching interactions. This study will explore the effects of such interventions.

Quinlan & Mayhew (2001) in their study on OS&H consequences on the growing 'precarious' workforce (contractors, sub-contractors, labour hire, casual and franchised workers) found that they were without normal protection of workers' compensation. These workers were more susceptible to accident/incidents. Their accidents/incidents can go unreported with the medical costs falling directly on the tax payer through the use of the Medicare system. They argue that policies and procedures need to be altered to encompass this changing workforce and mandatory reporting through formal OHS Management Systems should come into effect. The CCI is made up of workers who contract and sub contract their work. Labour hire workers are sought on a continual basis and these workers are often in casual work arrangements.

The value of structuration

Giddens theory was produced in a decade where the Berlin Wall stood and our only interconnections were unstable telephone lines. How does his framework stand the test of time and the application to a specific issue? In terms of social relevance the theory is formed from a broad conceptual base drawing together the threads of many previous theoretical constructions form previous decades. It appears unsullied by any connection to previous social ordering but critics from a Foucaldian or actor network perspective (Law 1994) would emphasise that it champions agency and denies the hegemony of discursive systems. From this perspective we are subjects of powerful discourses with little agency and just align our subjectivity with specific discourse that shape and reshape our being. Any 'use' of structuration theory should be tempered with such perspectives. In terms of applicability to organisations and the particular issue of safety structuration theory again appears to provide utility. While framed as a grand sociological theory, it forms an effective platform for organisational analysis as they are microcosms of the broader social entity. However, one caution would be to recognise that organisational actors are social being with other lifeworlds and not closed systems. Our assessment is that structuration theory provides an effective frame for studying the patterns of discursive relations in organisational practice and can help illuminate how safety and unsafe practice is produced.

Conclusion

In this paper we have sought to introduce the production of safety as a valid research investigation and provided details of the specific research context and aim. We have then introduced and explored structuration theory as a useful framework for picturing and researching the production of safety within organisations and critiqued that framework as an organisational research resource.

The CCI has its own specific industrial organisational culture with continuing unsafe work practices. The industry that must construct both *infrastructure and safety*, and the practice of producing these competing constructions often places their associated values in conflict. The production of safety is initiated by discursive instruments and values in action. The current culture has elements of reinforcing patterns and is therefore self perpetuating (Giddens 1984, Hassard 1993, Morley 1991). Giddens (1984) asserts that a *dualism* exists where continual social interaction both constitutes and is constituted by social structure. Structure and social action mutually mediate and constitute each other. As structure acts to shape action and practice re-shapes patterns of structure. Everything we 'do' is affected by the culture and in turn influences the culture within an organisation. The values we bring into the organisation are affected by the values within the organisation and in turn help to form the future values of the organisation; these values are therefore 'modulated' (Giddens 1984).

Producing safety is a complex labyrinth of assumptions about what is good for organisations at the global and local level. Competing discourses align with specific values, codified inscriptions distribute representations of specific values, but it is the values in action that produce 'safe' workplace practice. The production of safety is therefore mediated by the discursive consumption of safety discourses. The CCI participants are social actors who bring into the workplace their own personal values. These values affect the culture and in turn are affected by the culture in which they work. These values are forever changing and reproducing through discussions or modalities as these social actors conform and comply or change the environment and people with whom they interact. It is all about organisational talk, but it is organisational talk that forms practices which can save lives.

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