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INCENTIVISED SELF-REGULATION AND THE PRACTICE OF HEALTH AND SAFETY REPRESENTATIVES ON SOUTH AFRICAN UNDERGROUND MINES

Academic thesis completed by published work.

Submitted to the School of Public Health, Faculty of Health Sciences, University of the Witwatersrand, in fulfilment of the requirements for the Degree of Doctor of Philosophy

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Declaration

I, Nancy Coulson, declare that thesis is my own original work conducted under supervision. It is being submitted for the degree of Doctor of Philosophy at the University of the Witwatersrand, Johannesburg, South Africa. It has not been submitted before for any degree or examination at any other university or institution.



Signed

23rd day of October 2020 in Johannesburg, South Africa.

Dedication

I dedicate this thesis to the memory of my late grandparents, Sidney and Ada Wood, who were lifelong community and Labour Party activists and whose thinking and commitments have permeated my own life.

I wish to honour the memory of the late Mr Dirk Bakker, who spent his career as a mining engineer and as a senior regulator of the industry, serving as the very first Chief Inspector of Mines, under the newly promulgated Mine Health and Safety Act.

His kindness and generosity in support of my study at the start of the fieldwork was deeply appreciated. His passing in 2018 was sorely felt.

And finally I honour any mineworker who takes on the complex role of being a health and safety representative.

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My first field trip to my research sites involved driving over the central barrier of the highway that lay strewn across the road in one of South Africa's major mining regions. This was the outcome of a service delivery protest held in a local community. Undeterred my fieldworker Theo, jumped out of the car and stood on top of the debris, so that I could drive over and out of the chaotic scene. I am indebted to my fieldworkers, Theo Likhethe and Godfrey Dlulane for their experience, calm disposition and good company over two years and many site visits.

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My thesis was made possible by a consistent stream of small and large kindnesses and the offer of desks that stretched over several years and two continents.

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Thesis material

Presentations arising from this study:

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Coulson N (2017) In our own voices: When risks outweigh benefits and motivation is replaced with incentives: The experiences of workplace H&S representatives on South African Mines -Select findings from case study research. University of the Witwatersrand, Johannesburg, South Africa, 7 March.

Coulson N (2018b) Worker health and safety representatives on South African mines: Responsibilised and facing discrimination. Cambourne School of Mining, University of Exeter, UK, 26 January.

Coulson N and Stewart PF (2019) System dysfunctions: The duplication and rupture of the safety system on South African mines and the constraints to worker self-regulation regarding the right to refuse dangerous work. In: *A WORKinMINING event: The Micropolitics of Mining Capitalism*, Liége University, Belgium, 11 September.

Coulson N (2019) Worker representation on safety and health in mining: International Perspectives. In: *IndustriALL Global Union Sub Saharan Africa, workshop on ILO C176 ratification and implementation.* Johannesburg, South Africa, 23 August.

Coulson N (2019a) Reflections on case study research: Where from, and where to, for worker-elected health and safety representatives? *International Mine Health and Safety Conference 2019 The Southern African Institute of Mining and Metallurgy.* Johannesburg, South Africa, 31 October.

Other activities arising from this study:

National Union of Mineworkers (NUM)

In 2018, as a consequence of my research I redesigned and piloted a five-day training module for health and safety representatives (HSRs) and shop stewards for the NUM and this process remains ongoing.

Occupational Health and Safety Manual – For Comment and Piloting: Aligned with SAQA unit standard ID: 259622 Describe the functions of the workplace health and safety representative

Pilot testing of manual: 21-22 May 2018

Cardiff Work Environment Research Centre (CWERC), University of Cardiff, UK

Participant at research meeting May 2017 for a global study of case studies of HSRs in coal mining (South Africa, Indonesia, India, Australia and Canada) (Walters et al., 2018a, 2018b).

Two month sabbatical January-February 2018 with Professor David Walters and Dr Emma Wadsworth, CWERC.

Publications arising from this study:

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Coulson N and Christofides NJ (2020) Worker health and safety representatives on South African mines_ A compassionate voice in the face of employer dominance and health complexity. *Extractives and Society* 7(1): 161–169. DOI: 10.1016/j.exis.2019.12.010.

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The funding for this research was provided by the Centre for Sustainability in Mining and Industry (CSMI) at the University of the Witwatersrand.

Abstract

Background

Pluralist arrangements requiring consultation between employer occupational health and safety (OHS) appointments and employee selected health and safety representatives (HSRs) are aligned with the ILO Convention 176 Safety and Health in Mining and are well-established worldwide. The post-apartheid promulgation of the Mine Health and Safety Act (MHSA) No. 29 of 1996 as amended marked the first time the appointment of worker elected HSRs became a legal requirement on South African mines. A two-tier structure of full-time HSRs (appointed to work full-time across the whole mine site) and workplace HSRs (appointed to a designated workplace only) represent workers' health and safety interests on large mines.

Globally worker representatives are a product of labour struggles and are associated with improved OHS outcomes, but their effectiveness has been undermined by neoliberalism. While this is well documented in highly industrialised countries very little has been written about the experience of worker representatives in middle-income contexts, such as South Africa and/or in Africa. Given the positive contribution of HSRs is under threat worldwide, it is timeous to consider what has happened in democratic South Africa.

Methods

Four in-depth descriptive case studies on underground gold, platinum and diamond mines with >500 employees were conducted between February 2015 and December 2016.

The case studies involved repeat in-depth interviews (up to four times) with HSRs (n=35). In-depth interviews were conducted with members of the employer OHS management system (n=18), members of the trade union health and safety structure (n=6) and focus groups (n=4) with production workers (n=37). Document review, non-participant observation at the mine health and safety committee and monthly telephone calls completed the data collection. Interview transcripts and other data were coded in Max QDA version 18 using inductive and deductive codes. Thereafter, exploratory and explanatory iterative cross-case synthesis ensued.

Secondary data analysis of a sector wide, concurrent mixed methods study that examined the implementation of the Right to Refuse Dangerous Work (RRDW) supplemented the case studies. The right to withdraw workers from a dangerous workplace being an important power granted to HSRs.

Findings

The South African HSR experience resonated with global studies, but was shaped by the high disease burden and socio-economic context. The findings of this study resulted in four peer-reviewed publications:

Paper 1: HSRs referenced the law incorrectly and took on the perspectives and responsibilities of the employer, which I described as *"creeping responsibilisation."* They faced discriminatory and retaliatory actions by the employer in their role. I developed a four domain framework to provide an underlying explanation of this. As a consequence, workers considered being an HSR as *"risky"* and did not want to take on the role. Policy and training gaps were found in the globally recognised pre-conditions necessary to support the implementation of worker representation.

Paper 2: HSRs were captured by the employer and unable to challenge the production imperative. Full-time HSRs reported to the employer safety department, who largely determined their day-to-day activities. They were party to two dominant communication loops which ensured they were unable to operate autonomously of the employer with respect to safety incidents. This was partially underpinned by incentives paid by the employer to HSRs. In the event of an inspectorate order for mine closure, trade union representatives and full-time HSRs sided with the employer to keep a mine open and productive.

Paper 3: South African mines are characterised by a triple disease burden; occupational, communicable and non-communicable disease are all of concern. Full-time HSRs were involved with all three disease burdens and carried out *"worker-led"* and *"employer-led"* activities. The employer exploited the two-tier HSR system to support their management of health challenges. Employers resisted the representative role for which HSRs were poorly resourced and ill-prepared. Where HSRs operated autonomously of the employer it was as the compassionate voice to workers; visiting workers in hospitals, ensuring workers accessed treatment, and supporting individuals with health problems to face hostile supervisors.

Paper 4: The HSR has the right to withdraw workers from a mine workplace that he or she subjectively deems dangerous (section 23, MHSA). Workers were found to be more likely to withdraw from a dangerous workplace under instruction from an HSR than of their own volition. Supervisors did not take HSRs seriously, and there was no

guarantee that a workplace would be made safe even after a withdrawal. Workers felt HSRs had no power and/or did not understand their role. Mandatory guidance issued by the regulator addressed some implementation gaps, but introduced management partiality by giving the employer the final decision in any dispute over an unsafe workplace.

Contrary to the intention of the MHSA, a disingenuous model of worker representation has emerged on South African mines that has undermined the autonomy of HSRs, which I term, *"incentivised self-regulation."* Five overarching themes shape the model: 1) The partial compliance of the employer and the positive value of HSRs to OHS; 2) the habitual dominance of the employer over the HSR, which was found to be severe despite high density trade union membership; 3) the fragile set of power relations around HSRs that concerned both their relationship with organised labour and with their own constituencies; 4) the non-compliance and irregularities that have become commonplace, specifically the provision of employer incentives to HSRs; and 5) the policy and implementation gaps in the sector concerned with the role of HSRs, their resourcing and their training.

The National Union of Mineworkers (NUM) made the earliest demand for worker elected safety stewards during the mass mobilisation of the anti-apartheid struggle years. Post-apartheid, the mobilisation of workers and OHS became detached and the dominant trade unions have pursued individualistic rather than collective agendas for OHS. For the future, new challenges in the South African mining context concerned with mine modernisation, the escalation of informal mining, the increased numbers of contract labour and the health and safety impacts of mining on local communities will rapidly reshape the agenda for HSRs and worker representation in South Africa.

Conclusion

The positions taken by both the employer and trade unions post-apartheid contributed to HSRs being undermined. Sectoral developments have not kept pace with the necessary policy and training requirements to support HSRs. Organised labour can strengthen the position of HSRs by revisiting the existing legislative provisions for workplace collectivism under the MHSA. New opportunities for labour OHS practice are emerging as elements of the South African labour movement repositions itself to mobilise the most disadvantaged, explores mechanisms for multi-union solidarity and shifts to more left leaning democratic practice in the workplace.

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Abbreviations

AIDS - Acquired Immunodeficiency Syndrome

AMCU - Association of Mineworkers and Construction Union

ANC - African National Congress

ART - Anti-retroviral Therapy

AU - African Union

BBS - Behaviour-based Safety

CCMA - Council for Conciliation Mediation and Arbitration

CEO - Chief Executive Officer

COSATU – Congress of South African Trade Unions

CSMI - Centre for Sustainability in Mining and Industry

DMR - Department of Mineral Resources

DMR-MHSI – Department of Mineral Resources – Mine Health and Safety Inspectorate

DMRE - Department of Mineral Resources and Energy

EU - European Union

FTHSR - full-time health and safety representative

GRI - Global Reporting Initiative

HCT - HIV Counselling and Testing

HIV - Human Immunodeficiency Virus

H&S - health and safety

HSR - health and safety representative

HREC - Human Research Ethics Committee

ICMM - International Council on Mining and Metals

ICOH - International Commission on Occupational Health

ILO - International Labour Organization

LRA - Labour Relations Act

LTI - Lost Time Injury

MCSA - Minerals Council of South Africa (formerly Chamber of Mines of South Africa)

MHSA - Mine Health and Safety Act No 29 0f 1996 as amended

MHSC - Mine Health and Safety Council

NCD -non-communicable disease

NEDLAC – National Economic and Labour Council

NIHL - noise induced hearing loss

NSP -National Strategic Plan

MOSH - Mine Occupational Safety and Health

MQA -Mining Qualifications Authority

NUM - National Union of Mineworkers

OECD - Organisation for Economic Co-operation

OHS - occupational health and safety

OHSA - Occupational Health and Safety Act No 85 of 1993 as amended

PHRU -Perinatal HIV Research Unit

PPE -Personal Protective Equipment

RLDW - Right to Leave a Dangerous Workplace

RRDW - Right to Refuse Dangerous Work

SDG - Sustainable Development Goal

SHE - Safety, Health and Environment

TAG - Technology Action Group

TB - Tuberculosis

TUC - Trade Union Congress

SWOP - Sociology of Work Programme, the University of the Witwatersrand

UASA - formerly the United Association of South Africa

UDF - United Democratic Front

UHSS - union health and safety structure

UK - United Kingdom

US - United States

WHO - World Health Organization

WHSR - workplace health and safety representative

WIG - Workplace Information Group

WIRS - Workplace Industrial Relations Survey

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Chapter 1

1. Introduction

1.1 Background

The right to an environment that is not harmful to health or well-being is enshrined in the South African Constitution (Republic of South Africa, 1996a). One such environment is the workplace, of which South Africa's deep level mines have a notorious past and reputation for accidents and poor health. As the apartheid era ended in the early 1990s, gold mining alone claimed the lives of between 500-700 mine workers per annum and estimates around the time were that 66 000 mineworkers had died in mine accidents and more than a million had been seriously injured since the turn of the century (Leger, 1988: 272). A study commissioned in 1985 by the then recently formed National Union of Mineworkers (NUM) concluded that workers' rights were key to safer mining (Leger, 1985). The report called for change, demanding the introduction of shaft stewards able to negotiate about health and safety at the mine site. Occupational health and safety (OHS) was at the core of union demands for a just workplace and was the site of struggle against the crushing apartheid system of the day (Leger 1988; Stewart and Nite, 2017). In 1994, the newly elected Mandela government promptly established the Leon Commission into mine OHS that recommended dedicated mine health and safety legislation (Leon, 1995). As a consequence, the Mine Health and Safety Act (MHSA) No. 29 of 1996 as amended (Republic of South Africa, 1996) came into law.

South Africa's mine OHS legislative environment, post the Leon commission is described as outcomes-based. "*A performance standard specifies the outcome required but leaves the concrete measures to achieve that outcome up to the discretion of the regulated entity*."(Coglianese et al., 2002: 3). Put more simply the legislation focuses on the required outcome or standard, and does not prescribe the action to be taken to achieve this. The MHSA holds employers responsible for OHS, but provides for consultative arrangements with workers to determine how particular outcomes are to be achieved. It is the dependence of this system on consultation and engagement with worker representatives that this thesis research examined.

Central to this research are the arrangements and rights of health and safety representatives (HSRs) under the MHSA (Republic of South Africa, 1996). Written around the same time as the International Labour Organization (ILO) Safety and Health in Mines Convention (C176) (ILO, 1995), the MHSA drew heavily on this international precedent. The preamble of C176 recognises workers' right to "*genuine consultation on and participation in the preparation and implementation of safety and health measures concerning the hazards and risks they*

face in the mining industry," and provides for the selection of worker representatives (Article 13). During the Leon Commission (Leon, 1995) the NUM drew heavily on developments at the ILO (Hermanus, 2019). In particular, the NUM argued at the commission for full-time OHS shaft stewards able to co-ordinate other HSRs appointed in localised workplaces (Leon, 1995a:21). In complete alignment with this, Chapter 3 of the MHSA makes provision for worker participation and consultation on health and safety. Specifically the Act sets out the arrangements and process to appoint a two-tier structure of HSRs. The two types of HSR are referred to as **workplace HSRs (WHSRs)** and **full-time HSRs (FTHSRs)**. WHSRs are appointed under Section 29(1) and FTHSRs under Section 26 and regulations 6 (1)(3) and (4)(Republic of South Africa, 1996).

The Act (Republic of South Africa, 1996) requires that every mine with 20 or more employees must have an WHSR elected by workers (for each shift at each designated working place at the mine (Section 25(1)). No WHSR is responsible for more than 100 employees, or 50 employees if the designated working place includes separate working places (Section 27(2)). The only qualifications placed on the WHSR is that he/she be employed in a full-time capacity in the designated working place and is acquainted with the conditions and activities (Section 28). WHSRs are not relieved from their normal job of employment. Section 26 and Regulations 6(1)(3) and (4) make provision for the appointment of a FTHSR subject to an election on a mine with more 500 or more employees. On election, a FTHSR relinquishes his or her job of employment for the duration of the appointment usually three years. FTHSRs may exercise their powers and functions in all parts of the mine for which they are appointed. Both types of HSRs are entitled to training without loss of pay (Section 30(6)). The powers granted to HSRs under the MHSA (Section 30) are aligned with those found under ILO C176 (ILO, 1995) and are discussed in Chapters 2, 4, 5, 6 and 7 of my thesis, and include the right to represent employees on any matter related to health and safety, and the right to refuse dangerous work (RRDW). A list the legal requirements /arrangements for HSRs under the MHSA is found in the appendices.

A bipartite or joint employer/employee mine health and safety committee must also be established at every mine with 100 or more employees (section 25(2)). Under law, the mine health and safety committee must be weighted in favour of employee representatives with at minimum four employee representatives (selected from amongst the HSRs (Section 34 (4) and Regulation 6.10)) and a number of employer representatives equal to or less than the number of employee representatives (section 34(2)(b)). The rights and powers of this committee are very similar to those granted to HSRs and include that it "*may represent*

employees" (section 36 (1)(a))(Masilo and Rautenbach, 2010: 1–44). The employee and employer representatives on the health and safety committee must each elect a chairperson from their number and the expectation is that the chair will rotate (Section 35(1)). All of these arrangements for HSRs and related to the mine health and safety committee are subject to the mine health and safety collective agreement negotiated and signed with recognised trade union/s at the mine site (Masilo and Rautenbach, 2010). Thus trade union collectivism sits at the heart of worker participation and consultation as conceived under the MHSA.

On a large South African mine there is a third type of HSR who are not described under the MHSA (Republic of South Africa, 1996). These are trade union members appointed through a union process to the branch or shaft health and safety structure. Individuals in these positions are most often full-time shop stewards who are appointed under the Labour Relations Act (LRA) (Republic of South Africa, 2002). Most often these individuals are located on the mine site at the union office. There are up to five members of the branch health and safety structure, a chair and deputy, secretary and deputy, and treasurer (not all of whom will be full-time shop stewards). This structure first appeared on South African mines at the end of the 1980s, where NUM had successfully negotiated with the employer the introduction of workplace safety stewards and committees (Leger, 1988; Stewart and Nite, 2017). Reference to members from the health and safety structure of organised labour is made using the abbreviation, **union health and safety structure (UHSS)** in this thesis. A common task for shop stewards is representing individual workers in the event of medical incapacitation and redeployment, and in compensation claims, as well as during investigations and inquiries. Although not appointed under the MHSA they may contribute to activities required under certain sections of the MHSA, specifically, section 11(5) employer investigations; section 60 inspectorate investigations; section 62 representing an employee during questioning as part of an investigation; sections 65 & 69 participation in an inquiry; section 20 a dispute arising because of an employee's unfitness to work; and section 26 negotiated revisions to the mine health and safety collective agreement.

The MHSA (Republic of South Africa, 1996) also ensures that alongside mandatory appointments for worker elected HSRs, the employer too has the necessary capacity to meet their OHS responsibilities under the Act. Mandatory appointments for the employer are stipulated for the day-to-day operational activities of the mine and for expert OHS functions. The employer must appoint a mine manager (section 3(1)(a)) responsible for day-to-day activities such as the training of employees, risk assessment, health and medical surveillance

programmes, ensuring safe and healthy working conditions and the production activities of mining. On very large mines this obligatory appointment will be found per shaft, or section, and will report to an employer representative (a discretionary appointment made by the employer, section 4(1)). Obligatory appointments must also be made with respect to OHS expertise including the Chief safety officer (Minerals Act regulation 2.17.4) and safety officer (Minerals Act regulation 2.17.1), the occupational medical practitioner (OMP) (section 13(3)&(4)) and the occupational hygienist (section 12(1)) all of whom may report to either the section 3(1)(a) or section 4(1) appointment. Although not a requirement of the MHSA, primary health care (PHC) services commonly found on large mines provide screening and treatment for human immunodeficiency virus (HIV) and tuberculosis (TB), as well as, treatment for other chronic conditions such as diabetes and hypertension (Balfour, 2018). Social workers provide support to mineworkers struggling with personal problems, stress and substance use through counselling and follow-up. Employer representatives on the mine health and safety committee include those appointed into mandatory positions as per the MHSA (Republic of South Africa, 1996) and individuals providing primary health care (PHC) and/or wellness services. Figure **1** summarizes the OHS arrangements for HSRs, the UHSS and employer representatives on large mines in South Africa. These arrangements are the immediate context for the research presented in this thesis. These arrangements are foregrounded for the reader for this reason, however there is some repetition of these arrangements in the results Chapters 4, 5 and 6.

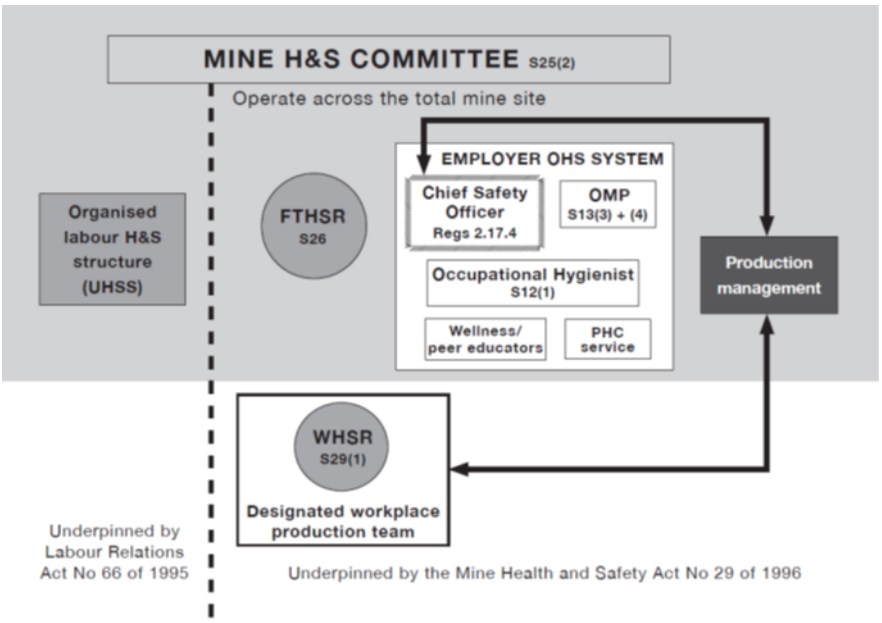


Figure 1 OHS arrangements for HSRs, the UHSS and employer representatives on large mines

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1.2 Justification for the research

The MHSA (Republic of South Africa, 1996) is shaped by an approach to OHS often accredited to the 1972 UK 'Robens' Committee' that concluded that "*apathy*" on the part of employers and employees contributed to poor OHS outcomes and that there exists a "*natural identity of interests"* between employers and employees on issues of OHS (Robens, 1972: 21). A feature of the Robens' approach is that employers' have primary responsibility for OHS risk management, and that workers are party to consultation about how best to address OHS risks through employee elected HSRs and a bipartite structure, such as the employer/employee health and safety committee. These are both found in the relevant Chapters of the MHSA (Chapters 2 & 3 respectively). The term "*regulated self-regulation*" is used to describe the system of employers and employees managing their own OHS practice within a regulated framework (Tucker, 2013a: 78).

The experience of self-regulation for workers is largely untried in Africa and has mainly not been researched outside of the Western industrialised context. Unlike highly-industrialised countries where the majority of studies about worker representation have been conducted, South Africa is an upper middle-income country with one of the highest Gini-coefficients in the world (Anand et al., 2016). Unemployment is extremely high currently standing at 29,1% (stats SA, Republic of South Africa, 2019: 7). The Sustainable Development Goal #8, *"Decent Work and Economic Development"* (UN, 2019) sits at the core of the country's National Development Plan (NDP) (National Planning Commission Republic of South Africa, n.d.). The priority being how can South Africa successfully put more of the country's peoples to work? *"Decent work"* and *"health and safety"* as a component of this can seem far removed from the immediate political ambition to reduce joblessness. This study opens up the policy debate about the effectiveness of self-regulation and outcomes-based legislation for OHS in the complex, middle-income context of South Africa.

At the outset, I undertook to provide insight and guidance to organised labour about the role and challenges faced by HSRs. During the pursuit of my thesis, IndustriALL Global Union launched a campaign to drive the ratification of the ILO Convention 176, (C176) Safety and Health in Mining in African states (IndustriAll, 2019). Currently only six African states have ratified C176 (ILO, 1995). My publications have been shared with the leadership of this campaign.

Importantly, sister legislation to the MHSA (Republic of South Africa, 1996), the Occupational Health and Safety Act (OHSA) No. 85 of 1993 as amended (Republic of South Africa, 1993)

has similar provisions for worker participation and many of the findings of this thesis will be relevant in other industrial settings in South Africa, beyond that of mining.

The Centre for Sustainability in Mining and Industry (CSMI), at the Wits Mining Institute, of the University of the Witwatersrand, works in partnership with government, business, organised labour and communities to understand a responsible approach to mining in South Africa and Sub-Saharan Africa. OHS is a key pillar of sustainable practice in the mining sector and this thesis has contributed to the Centre's OHS regulation research interest.

1.3 Overall aim and specific objectives

My doctoral research was a cross disciplinary study that bridged public health practice with an understanding of the sociology of the mine workplace. The overall aim of the study was:

To explore the nature of representation as practiced by health and safety representatives appointed under the MHSA 29 of 1996 as amended on four underground mines in South Africa

My thesis involved two pieces of discrete research. The first involved in-depth descriptive case studies at four underground mine sites that formed the substantive component of this thesis. The second study involved secondary data analysis of a mixed methods study to understand the implementation of the right to refuse dangerous work (RRDW) (Stewart et al., 2013). This second study commissioned by the Mine Health and Safety Council (MHSC) was conducted under the auspices of the CSMI. Data from the study was included in my thesis because HSRs appointed under the MHSA have the power to withdraw workers from a workplace they consider dangerous. It therefore provided important complementary data to that of the main study.

The objectives of my study were:

Objective 1: To explore the selection, preparation and day-to-day experience of being a HSR.

Objective 2: To assess the communication and interactions of HSRs with the broader system of OHS management as envisaged by the MHSA (this includes the mine health and safety committee, the regulator, company OHS system, first line supervisors, organised labour and production teams).

Objective 3: To investigate worker experience of the implementation of the right to refuse dangerous work (RRDW).

1.4 Organisation of thesis

Following the introduction in **Chapter 1, Chapter 2** explores the literature. It describes the global and South African arrangements for, and challenges to, worker representation in OHS. It provides the background context to this globally as pro-capital policies ushered in neoliberal regimes in the workplace. This is then traced for South Africa with respect to the transition from apartheid to a democratic state in the early 1990s. The review presents the global case by exploring the pertinent questions in the international discourse and addresses the little that is currently known about the South African context. As there was very little published data, the gaps with respect to the knowledge about worker representation in middle-income countries and in Africa are significant.

Chapter 3 describes the methodology for my doctoral research. It outlines the in-depth descriptive case studies conducted at four underground mine sites that informed the results found in Chapters 4, 5 and 6. It also describes the secondary data analysis of the mixed methods study to understand the implementation of the RRDW on South African mines which informed the results presented in Chapter 7.

Chapters 4-7 comprise four peer-reviewed publications that serve as the results section of my thesis:

> **Chapter 4** is a manuscript describing the role and experiences of WHSRs on four underground mine sites. Their selection, preparation, activities, the workplace context and consequence are described through the design of a four domain model. Central to this manuscript is the hypothesis that WHSRs faced *"creeping responsibilisation,"* discrimination and punitive actions from the employer.
>
> **Chapter 5** is a manuscript that describes the role of FTHSRs in safety management. Taking a systems approach I apply Luhmann's concept of socio-autopoiesis (Luhmann, 1995) to describe the communication and interactions between FTHSRs, safety management, production management, the UHSS, production workers and the regulator. Against a backdrop of aggressive production politics, two closed loops of communication were examined. De-facto these simplified the complexity associated with the social relations of production and kept FTHSRs disconnected from a more strategic level of engagement with OHS. Employer dominance of the arrangements for worker representation is discussed.
>
> **Chapter 6** is a manuscript that describes the activities of FTHSRs in the triple disease burden of occupational disease, communicable disease (especially HIV and TB), and

non-communicable disease (NCD), such as, diabetes and heart disease. HSR activities were categorized as either employer or worker-led activities. Those that happened under the instruction of employer were supported, while those that were worker-led faced employer resistance. As a consequence of both the complexity of health issues on mines and the dominance of the employer, where HSRs acted independently, it was as a compassionate voice to workers. The manuscript considers the revealingly different role taken by HSRs in South Africa, in comparison with that of HSRs in a highly-industrialised contexts. The implications for regulatory policy and trade union strategy are discussed.

Chapter 7 is a manuscript that examines workers' perceptions of the implementation of the RRDW against the backdrop of revised guidance issued by the regulator (Department of Mineral Resources (DMR), Mine Health and Safety Inspectorate (MHSI)(Department of Mineral Resources, 2016b). Under the MHSA Section 23(b), HSRs have the power to withdraw workers from a workplace that they consider dangerous. The exercise of the formal right was not found to be the default position of workers, although workers were more likely to withdraw from a workplace under the instruction of a HSR. Gray's (2002) typology of worker resistance to danger was applied to understand worker actions. Informal worker resistance, and informal, non-confrontational consultation, co-operation and collaboration between workers and supervisors, were both found to be commonplace. Although the revised guidance issued by the DMR-MHSI had gone some way to address implementation gaps in the interest of workers, of concern was its potential partiality to the interests of the employer.

Chapter 8 discussed the key results of my doctoral thesis with respect to what I learnt about the South African experience of worker representation against the global case. Five major themes concerned with worker representation on South Africa mines were surfaced through my research and a new model of *"incentivised self-regulation"* described. The stance of organised labour to this new model is considered at each of the case study sites.

Chapter 9 concludes by considering the next steps for worker representation on South African mines and the likely future without more deliberate support. I then make several recommendations for policy and research. All recommendations being based on the contribution of my thesis.

Chapter 2

2 Literature review

The global literature about worker representation in OHS is centred around highly-industrialised nations, specifically focused on the UK, other countries in Europe, Canada, Australia and New Zealand. Studies in these countries document the introduction, challenges and effectiveness of worker representation across a broad range of sectors and size of workplace. This makes for a disparate set of studies because worker representation is shaped by the specifics of the legislation and the context in which it is enacted. Despite this a global narrative about worker representation has emerged which is compelling and commonalities exist in the discourse regardless of the characteristics of the workplace. In summary, the last 50 years of worker representation have witnessed a shift from labour strength in the 1970s and gains for worker OHS rights under new legislation and regulations, towards the increasing bureaucratisation of OHS and a mounting challenge to the expression of worker representation given the weakness of labour under neoliberalism (Ibsen and Tapia, 2017; Standing, 2009, 2014).

This literature review considers this shift and what is known about the South African experience of worker representation. Global literature is largely drawn from six countries; the UK, Canada, Australia, New Zealand and the European countries of Sweden and Spain. Specifically the UK, Canada and Sweden are selected because during the 1970s these countries made an important contribution to contemporary OHS legislation which is relevant to South Africa. The MHSA borrowed heavily from the International Labour Organization (ILO), European and Canadian precedents in its drafting (Hermanus, 2019). Spain and New Zealand are considered because the introduction of new OHS legislation was contemporary with the MHSA in South Africa and related studies have resonance with work in South Africa. The review considers the global narrative about worker representation with respect to South African developments related to OHS and worker representation on mines.

At the outset there are limitations to this review. There is very little English language literature about worker representation in newly industrialising and middle-income countries such as Brazil, India or other African states, which are contextually more equal to South Africa. Where studies are available these are woven into the narrative presented here and there is no attempt made to examine similarities and differences across industrialised and newly-industrialised contexts because the evidence is too weak. There are also limited studies about worker representation in mining, although the recent comparative study of worker representation in coal mining is an exciting contribution to a more globalised narrative (Walters et al., 2018a).

My literature review is divided into two major sections. The first considers the global narrative for worker representation. This starts with an explanation of the origins of contemporary OHS legislation, it then explores the practice of being a worker representative, the historical and present arrangements for the training of representatives and lastly their effectiveness and the necessary pre-conditions within the broader socio-political context to underpin worker representation. In the second section, I explore these same themes as they apply to developments within South Africa. I end both sections with a summary of the major trends and developments that have emerged. This then lays the basis for an interpretation of my research findings against global literature for worker representation which is then developed further in the research Chapters 4, 5, 6 and 7, and in the discussion found in Chapter 8.

2.1 Global labour victories and the development of contemporary OHS legislation

Worldwide contemporary OHS legislation is primarily shaped by three developments: labour struggle for better working conditions (Bloor, 2002; Boal, 2009; Storey, 2005; Walters, 1996a; Walters and Quinlan, 2019), the Swedish co-operative model between labour and the employer that had its origins in the early 1900s (Frick, 2013) and important commissions that took place in Canada and the UK during the 1970s (Ham, 1976; Robens, 1972). Sometimes referred to as the *"Anglo-European approach"* (Walters and Nichols, 2009: 3), the model is framed by process or outcomes based legislation that introduced *pluralist* arrangements between the employer and labour into the workplace for OHS. In practice, this revolved around the appointment of worker elected or selected representatives/HSRs and joint employer/employee health and safety committees to institute employer consultation and, in some cases, joint decision making with respect to OHS. The practice was first introduced in Scandinavian countries, then into the UK and the other English speaking countries of Australia, Canada and New Zealand. Subsequently, other European countries have also adopted this approach under the European Union (EU) Framework Directive 89/391 (European Commission, 1989). Spain adopted new OHS legislation around the same time as South Africa introduced the MHSA (Ollé-Espluga et al., 2015). Workers' right to refuse dangerous work or withdraw from a dangerous workplace is, in many instances, a component of this regulatory package too. It is a component of ILO Convention 176 (C176) Safety and Health in Mines (ILO, 1995). HSRs being granted the power to withdraw workers from a dangerous workplace under Article 13 thereof.

The origins of the Anglo-European model are regularly traced back to the government commissions that took place in the 1970s (Ham, 1976; Robens, 1972). Both the Robens' Committee in the UK and, shortly thereafter, the Ham Commission in Canada significantly shaped our expectations of contemporary OHS legislation, shifting OHS regulation away from prescriptive regulation that was overburdened with detailed standards. Tucker (2013a) argued that the requirement of prescriptive legislation for an external regulator had an inherent practical limitation for health and safety improvements. Robens' believed that both the employer and workers had a mutual interest in better OHS outcomes (Robens, 1972: 21). In his writing, prior to his Commission Robens advanced the necessity for the employer to embrace trade unions, and that the employer and trade unions shared mutual interests,

"Progressive management should look upon trade unionism as an ally, and not as an obstacle. It should seek to bring it into a complete partnership with mutual interests in the financial success of the enterprise." (Robens, 1970: 87)

His Commission subsequently recommended there should be a statutory duty placed on the employer for consultation with employees, and/or their representatives, and that provision should be made for these participatory arrangements (Robens, 1972: 22). Robens argued that the state's interest was to introduce a more effective *"self-regulating system"* believing that a responsible employer would not ignore an OHS concern if raised by a worker representative during an inspection (Robens, 1972). *"He should be empowered to carry out inspections, and we do not believe that any responsible employer would ignore a genuine problem revealed by such inspections. He should have access to and contacts with government and local authority safety inspectors" (Robens, 1972: 21)*

The Ham Commission took a similar stance to Robens and adopted the principle of co-management of the OHS function between the employer and employees and introduced the notion of an *"internal responsibility"* system. Essentially, *"Employers would be encouraged to self-regulate and workers would be empowered to ensure this happened."* (Lewchuk, 2013: 159). At the time the Commission thought that worker-auditors as found in Sweden were to be appointed and joint health and safety committees in the workplace were to be mandatory (Lewchuk, 2013).

Not everyone agreed with the underlying assumption in the thinking of both Robens' and Ham, that OHS was essentially a co-operative concern. Nichols and Armstrong (1973) pointed to the fundamental conflict of interest between the management of production and

that of OHS. Arguing that the central regulatory problem was how to counteract the pressure to prioritise production over safety, and that the true solution required shifting the power over production to workers on the shop floor. Self-regulation remains even today, roundly criticised for failing to recognise the fundamental social conflict at its core, and for introducing the notion that conflict over OHS has no place in the workplace and in industrial relations (Biggins, 1987; Creighton, 1982; Glennon, 1987; Johnstone, 1999; Tombs and Whyte, 2012).

Other international policy documents such as the EU Framework Directive 89/391 (European Commission, 1989) and ILO Conventions 155 Occupational Health and Safety (ILO, 1981) and 176 Safety and Health in Mining (ILO, 1995) have subsequently all validated the pluralist approach. In 2008, it was estimated that there were more than 1 million HSRs appointed in compliance with the EU Framework Directive 89/391 alone (Menéndez et al., 2008: 9). By the time the MHSA in South Africa was being drafted, pluralist arrangements in OHS legislation were globally very well established. In the last 20 years, other developments that have seen the introduction of new or revised legislation such as that in New Zealand, or the harmonisation of OHS legislation in Australia have not embraced any fundamental challenge to pluralism either (Harris et al., 2012; Johnston, 2009; Safe Work Australia, 2016). In Canada, the Dean Panel appointed three decades after the introduction of the Ontario Occupational Health and Safety Act to review the effectiveness of the internal responsibility system also concluded that Ham had it right. The role of the state was to set standards and there could be no expectation for the inspector to be at each and every workplace to enforce them (Lewchuk, 2013). Thus pluralist arrangements between the employer and employee representatives have endured.

The context behind the Robens and Ham Commissions is very important if we are to understand what has subsequently transpired for worker representation in the last fifty years. Robens and Ham arrived at their conclusions during a time of high trade union density and formal employment (Fairbrother, 1996). For industrialised nations, the 1970s were the culmination of a long period of economic growth and stability, which as a consequence enabled workers to put OHS on the agenda and challenge what were considered normal working conditions (Storey, 2005). In fact, union campaigning for worker representation/HSRs preceded both commissions. In the UK, pluralist arrangements in coal mining can be traced back to the long history of worker struggle in the late 19th and early 20th Centuries (Boal, 2009; Walters et al., 2018a). Coalminers have held the statutory right to appoint representatives to inspect mines on their behalf since 1872. Later these

representatives were appointed through the trade unions and had similar rights to carry out inspections at least once a month and to investigate accidents and dangerous occurrences (Walters and Quinlan, 2019). In Canada, the 1960s and 70s were marked by revelations about asbestos, black lung disease, exposure to high sulphur dioxide gas emissions (hard rock nickel miners) and radon (uranium miners). Activists in industrial workplaces (including the well organised mining sector) organised under the uniting theme of *"our health is not for sale*" and the demand for three rights, *"the right … to know, to participate and to refuse unsafe work"* (Storey, 2005: 52 and 54).

Labour struggles in the UK overturned the employer bias of the post Robens' legislation too. The Health and Safety at Work Act 1974 (UK Government, 1974) which on introduction required the employer to do no more than *"consult"* with workers was effectively challenged by organised labour through the Safety Representatives and Safety Committees (SRSC) Regulations, giving trade unions the right to appoint representatives (UK Government, 1977). As a consequence, it was labour elected representatives who entered into joint arrangements with the employer. Referred to as the *"preferred model"* for worker representation, because representatives were rooted in worker collectivism under the arrangements for labour relations, which in the 1970s were well established in industrialised nations worldwide (Fairbrother, 1996; Nichols and Walters, 2009). Despite there being a significant challenge to the preferred model under the subsequent neoliberalism, the extent to which worker representatives are labour representatives remains relevant. In unionised workplaces in the UK, Sweden, Australia and Canada, HSRs remain union appointments.

Although these were marked victories for labour in the 1970s in the proceeding decades the *"preferred model"* has come under threat. In the 1980s and 1990s organised labour was pushed into a defensive position. Labour faced an onslaught of neoliberal, pro-capital policy, which transferred economic and social concerns away from government and the public sector into private concerns and a climate of deregulation, which nurtured free market capitalism and the dominance of a globalised economy (Alfredo and Johnstone, 2005). A profound change took place in the contemporary workplace characterised by the demise of labour strength and the emergence of large numbers of precarious labourers, such as workers on contracts, those under labour brokers or working under other such outsourced arrangements (Standing, 2009, 2014). A change so profound that Castells (1996) foresees the end of labour, arguing that trade unions are unable to reproduce themselves in the current economy.

Globally, trade union density is diminishing. Estimates for union density are now, on average, below 20% across all Organisation for Economic Co-operation and Development (OECD) countries (Ibsen and Tapia, 2017: 175). Even in a well unionised context such as Sweden trade unions are diminishing and only in larger workplaces has the model for worker representation in OHS been easier to protect (Frick, 2013). Lewchuk et al. (1996) stated that while the internal responsibility system has the potential to reduce injuries the rise of precarious workers revealed its limitations. Short-term contract labour and outsourcing have undermined the collectivism at the heart of the dominant model for worker representation in OHS worldwide (Frick, 2013; Gunningham, 2008; Loewenson, 2001; Tui McKeown, 1997). There have been less than favourable changes to policy too. Under the EU Framework Directive, for example, trade unions were not automatically awarded the right to consult and represent workers on OHS. In the UK, new regulations that were brought in under a conservative government in order to comply with the EU directive allowed employers latitude in deciding whether to consult with union representatives, or with worker selected representatives, or with employees (UK Government, 1995; Walters, 2006). So although arrangements for worker representation remain well established, the conditions under which these arrangements were first introduced have markedly changed. Trade unions have lost their foothold and the context is one that is hostile to organised labour in very many workplaces worldwide.

2.2 Global worker representation in practice

Approximately 20 years after the introduction of pluralist arrangements a plethora of studies emerged about worker representation. Between the 1990s and early 2000s researchers were predominantly interested in three research questions: The impact of pluralist arrangements between worker representatives and the employer (both HSRs and employer/employee joint committees) on OHS performance; the role taken by HSRs and how as a consequence they exercised their powers; and, the effectiveness of training for worker representation. The insights gathered from these studies led researchers to determine a set of pre-conditions necessary in the broader environment for effective OHS representation, and these preconditions are discussed in section 2.2.3 of my thesis. It also prompted researchers to uncover how the expression of worker representation is ultimately shaped by economic and political pressures.

Essentially accounts of representation operate in a continuum between cooperation and conflict between representatives and the employer. Researchers agree that in the last three decades there is either a collapse in the trust between management and workers, and/or a

deterioration in the industrial relations climate, both of which provide an underlying narrative to why participative arrangements for OHS are either less effective and/or adapting to remain effective (Gunningham and Sinclair, 2009, 2012; Hall et al., 2006; Walters, Quinlan, et al., 2016a). For example, Ayes and Braithwaite (1991) in their *"empowerment model of tripartism"* cite trust and power as relevant to the role of HSRs;

"There is no reason for us to trust those who have no influence over our lives; but once an actor is empowered in relation to us, we are well advised to build a relationship of trust with that actor. The boss may have little reason to build a relationship of trust with a particular worker; but once that worker is elected as health and safety representative with the power to stop production until safe conditions are restored, the prudent employer will seek to build rapport and ultimately establish a relationship of trust. Power constitutes trust." (Ayres and Braithwaite, 1991: 477).

As neoliberalism has taken shape, researchers have similarly couched their understanding of the role of representatives within the politics of production and resistance (Burawoy, 1979, 1985). Walters and Nichols (2009) in their description of worker representation acknowledge that the regulatory framework legitimises the HSR role, but in practice it is facilitated through the channels of workplace labour relations (Walters and Nichols, 2009).

"'workers' representation' refers to the situation in which workers represent their interests through the normal channels of labour relations. While the predominant approach to achieve this is through a regulatory framework that legitimises workplace institutions that give workers a voice on matters of health and safety, the process of effective representation always occurs through channels of workplace labour relations, is supported by organised labour and is subject to many of the same influences on the nature and extent of these wider relations." (Walters and Nichols, 2009: 2)

Nichols and Armstrong (1973) argued at the time of the Robens' Committee that the central regulatory problem for OHS was how to counteract the pressure to prioritise production over safety, and that the solution would always require shifting the power over production to workers on the shop floor. For Hall (2006) production politics captures, *"the day-to-day relations amongst worker representatives, managers and co-workers and the interplay between worker representatives' efforts to improve health and safety and collective bargaining generally, and the process of hazard identification and correction, and worker representatives' efforts to mobilize legislated occupational health and safety regulations and inspections to support their claims for improvement "* (Hall et al., 2006: 409–410)

One consequence of the reduction in trust and a hostile industrial relations environment has been an increase in the likelihood of workers being held responsible for OHS violations in place of the employer described as *'responsibilisation'* (Gray, 2009; Walters and Wadsworth, 2017). For example, a legal expression of *'responsibilisation'* was found in a system of OHS ticketing where on-site penalties issued by inspectors for OHS violations were found to be unduly biased against workers, deflecting responsibility away from the employer as the primary OHS offender (Gray, 2009).

Against this backdrop the role and activities of HSRs, their training, effectiveness and pre-conditions for representation, are discussed in the following three sub-sections.

2.2.1 HSRs their role and exercise of their powers

The powers and functions for worker representation in different jurisdictions under the Anglo-European model including those under the South African MHSA are broadly similar (refer to Box 1) (Walters and Nichols, 2007, 2009). As recognised by the ILO Occupational Safety and Health Conventions C155 and C176, essentially worker representatives must be appointed by employees (not always trade union appointments), be protected from discrimination and retaliation whilst undertaking the duties of being a representative, and be provided with training, and time to complete the tasks of being a representative (ILO, 1981, 1995). There are general powers to inspect the workplace and for consultation with the employer and the regulator about OHS as listed in Box **1**. HSRs may also have the powers to withdraw workers from a dangerous workplace (ILO, 1995).

Box 1: Powers and functions of HSRs (Walters and Nichols, 2007: 13)

- Selection of worker representatives by employees
- Protection from victimisation or discrimination as a result of the representative role
- Paid time off to carry out the function of safety representative
- Paid time off for training to function as a safety representative
- Rights to receive information from employers on hazards to the health and safety of workers at the workplace
- The right to inspect the workplace, investigate complaints from workers on health and safety matters and to make representations to the employer on these matters
- The right to be consulted over health and safety arrangements, including future plans
- The right to be consulted about the use of specialists in health and safety by the employer and
- The right to accompany health and safety authority inspectors when they inspect the workplace and to make complaints to them when necessary.

Although representatives have the right to be consulted ordinarily they do not have the power to insist on negotiation (James, 2009). Less commonplace are the enforcement powers granted to Australian and Swedish HSRs who can issue provisional improvement notices (PINs) to the employer and order work cessation which oblige the employer to take remedial action. In such cases, the regulator plays an adjudication role (reviewing the application of these measures and the enforcement thereof). Also referred to as a model of *"enforced self-regulation"* (Johnstone, 2009: 42). In New South Wales, Australia, trade union officials have limited entry to workplaces for the purpose of investigating any suspected contravention of OHS legislation. (New South Wales, 2011).

A central concern when considering the activities of HSRs is the extent to which representative activities happen autonomously of the employer, such as when HSRs report in to trade union structures (Walters, Quinlan, et al., 2016a). In workplaces where trade unions are absent, HSRs default to *"direct methods"* in the absence of worker collective structures and in this instance liaise directly with the employer (Nichols and Walters, 2009; Wright and Spaven, 1999). In this scenario participation is more readily set by the employer and worker representatives are just as likely to act in the interests of the employer OHS system than that of workers (Walters, Quinlan, et al., 2016a). HSRs may find themselves de facto co-opted into the employer safety system acting as *"safety police"* (Blewett and

Dorrian, 2011) or adopting an approach best described as being the *"eyes and ears of management"* (Walters and Wadsworth, 2017). The preponderance of behaviour-based safety approaches in industrial workplaces has aided this too and it has become commonplace for worker representation to be no more than following behaviour-based rules (especially in small firms and increasingly reported in larger organisations) (Frick, 2004; Frick and Kempa, 2011; Quinlan, 2014; Wadsworth et al., 2015; Walters et al., 2020; Walters, Quinlan, et al., 2016b). HSRs articulate their experience of direct activities as being in the middle, neither entirely for the employer, nor for the workers.

"We are the villains, always, for one of them [employers or employees] *and for the other of them, we are caught in the middle."* (Garcia et al., 2009: 80)

Hall et al. (2006) argued that under the mounting bureaucratisation and detail of employer health and safety management, the role of representatives is increasingly depoliticized and representatives essentially become junior members of the management team dominated by management experts,

"The broader effort by management to bureaucratize and professionalize health and safety may encourage a depoliticized understanding of the representative's role as a junior member of the management "team," while continuing to empower management experts over workers." (Hall et al., 2006: 428).

Despite these difficulties, two important themes have emerged in the literature with respect to the role of HSRs. The first concerns the activities and strategies of HSRs to remain effective (Hall et al., 2006), and the second is the extent to which HSRs use their powers (Frick, 2013). In the last 5-10 years, studies of HSR activity have largely happened where new or revised legislation has been enacted. Specifically in Europe, post the introduction of Directive 89/391 (Menéndez et al., 2008), in Spain (Garcia et al., 2007, 2009; Ollé-Espluga et al., 2014) and in New Zealand (Harris et al., 2012). These studies are instructive and report that HSRs predominately play an operational, rather than strategic or advocacy role, that could challenge the production and OHS priorities and standards of the employer. Considerable variation in the stance of HSRs to their role is also reported as a consequence of the skills of individual HSRs, their understanding of their role and their relationship to organised labour (Hall et al., 2006, 2016; Harris et al., 2012).

Harris et al (2012) used a framework first developed to describe the activities of OHS practitioners (Brun and Loiselle, 2002) and applied it to the activities of HSRs in a metal

work setting. In summary, the three broad areas of activity for safety practitioners aligned with those of HSRs. These were the "*Organisational activities"* concerned with the administration of procedure including that concerned with accident investigations; the "*technical activities"* that were primarily focused on risk analysis and problem solving; and, the "*human activities"* which focused on the engagement and education of workers about OHS matters (refer to **Table 1**) (Harris et al., 2012). Spanish studies found representatives' interaction with workers was mostly based around information provision which would align with the *"human activities"* category (Garcia et al., 2007; Ollé-Espluga et al., 2014).

HSR activities at the strategic level are less common including those in unionised workplaces, although consultation with the employer is a cornerstone of the HSR role under international frameworks such as ILO C176 Safety in Mining. In Spain, for example, the legal requirement to be consulted by the employer regarding health and safety matters especially at a more strategic level was found to be less common, including consultation related to risk management, accident investigations and prevention planning (Garcia et al., 2007, 2009). Where HSRs have been shown to exert an influence on the employer at a strategic level it is chiefly through their careful application of knowledge, both technical and legal. Harris et al. (2012) coined the term *"craft expert"* which implied that HSRs understood their purpose was to act as a *"safety guidance person*" and that their *"dominant prevention strategy was to assert their specialist craft-based expertise at OHS committee meetings to influence the development of standards and procedures for the management of specific hazards."* (Harris et al., 2012: 492.) (Refer to Table **1**) In Queensland, HSRs on coalmines relied on in depth knowledge of the law to act effectively, *"There was universal acceptance that getting 'the knowledge' was essential to their success as a representative.*"(Walters, Johnstone, et al., 2016: 435).

Table 1: The activity profile of HSRs at strategic and operational levels using an adapted framework first devised for OHS practitioners.

Strategic level **(Brun and Loiselle)**(Brun and Loiselle, 2002)	**Organisational** Develop OHS policies Develop annual prevention budget	**Technical** Influence strategic decisions via the provision of technical advice Develop standards for the use of equipment	**Human** Foster worker participation in OHS Make senior management aware of workers' OHS concerns
Activity Profile HSR (Harris et al New Zealand) (Harris et al., 2012)		Act as information conduits at OHS committee	
Operational level **(Brun and Loiselle)**(Brun and Loiselle, 2002)	**Organisational** Ensure OHS procedure & policy applied Investigate accidents	**Technical** Research ways of resolving OHS issues Conduct risk analyses	**Human** Train workers in safe work methods. Discuss OHS issues with workers
Activity Profile HSR (Harris et al New Zealand) (Harris et al., 2012)	Administration of procedure- completion of paper work and reporting to support implementation of the OHS management system	Monitoring the workplace Support/provide solutions to control measures and production targets	Information and advice to workers Improving the attitude of workers Monitoring worker compliance

Hall et al. (2006 and 2016) have perhaps done the most work to understand how HSRs can exert influence over the employer given the change to the production context by examining the role of HSRs within the context of the joint employer/employee health and safety committee in Ontario, Canada. Their work showed that HSRs either operated with reference to the labour relations context, or not. HSRs that did not, relied almost solely on technical-legal positions that were defined under the law, primarily seeing themselves as inspectors who reported hazards. Political activists understood that their role as representatives were integral to the labour relations context. However, within the political activists grouping was a sub-set of successful *"knowledge activists"* who engaged management through the strategic use of information drawn independently of their employer (Hall et al., 2006). In comparison with other political activists who relied on information provided by the employer, *"knowledge activists"* did not either wholly rely on management experts, their own personal experience, or their own common sense to secure change. Rather they sought out information external to the employer that contested the position of the employer. Thus, this group of HSR activists successfully used what are often considered employer tactics to restrain organised labour, *"research, information, analysis and communication"* while they still engaged with the more overtly political activity of mobilising workers to complain and/or to refuse dangerous work (Hall et al., 2006: 427). A follow up study found that

knowledge activists focused more time and effort on independent research and that they spent more of their time outside of the committee context organising, educating and interacting with workers about health and safety (Hall et al., 2016). To date this work provides one of the best insights into how the system of worker representation is evolving given the radical shift in context.

One of the questions that has concerned researchers is why don't HSRs use their extensive powers more frequently and effectively? (Frick, 2013). Studies repeatedly confirm that the right to withdraw from a dangerous workplace is used cautiously by workers and HSRs (Hilgert, 2013). Only 18% of Spanish HSRs reported submitting a proposal to stop unsafe work (Garcia et al., 2007:786) and 29% of Swedish representatives (Trägårdh, 2009). In Australia where HSRs in certain states can issue statutory notices these provisions are also used guardedly. HSRs on a Queensland coal mine made cautious and effective use of their powers, including those to suspend operations (Walters, Johnstone, et al., 2016). Swedish safety representatives who operate largely in a cooperative and consensus oriented tradition (Frick and Sjöström, 2006) only make the decision to stop work when they find risks to be acute and serious. In Sweden, between 2004-06, Gellerstedt (in Frick 2013: 57) found trade unions reported only 100 local stops per year, which included those in the highly unionised mining sector. Gellerstedt (in Frick 2013: 63) found that 29% of safety representatives made formal improvement requests of which 75% resulted in an acceptable answer from the employer. In the event of a labour inspector being called in they mostly supported the safety representatives' views (Frick, 2013: 63). In summary, it should be concluded that where HSRs have considerable powers to challenge the production process these are used infrequently and to good effect when addressing hazards in the workplace.

2.2.2 The training of HSRs

The training of HSRs is shown in studies to be essential to HSR activity, trained representatives being more active than those who are untrained (Garcia et al., 2007; Kaminski et al., 1995; Milgate et al., 2002). Historically, new OHS legislation in the 1970s was backed up by state sponsored resources and in highly-industrialised countries large bureaucracies emerged in support of HSR training. However, although the training of HSRs was government funded, the content and delivery was largely controlled by trade unions, such as in Ontario (Storey, 2005), Sweden (Frick, 2013) and in the UK (Walters, 1997). A common pedagogy emerged across union training that embraced labour education approaches and liberal adult education (Walters, 1996b, 1997). A review in the UK undertaken in 1987 for the Health and Safety Executive concluded that trade union training

of safety representatives was one of the most important factors contributing to improvement of their role in joint arrangements for health and safety (Walters and Gourlay, 1990). In the last couple of decades these arrangements have faced state cuts in many contexts. In Sweden, for example, the abolition of state subsidies meant the 40 hour basic representative training that had reached very large groups of safety representatives was then paid for by the employer, which trade unions reported led to a reduction in representative training (Trägårdh, 2009). Wright and Spaven (1999) reported at the operational level employer obstruction to representatives who wished to attend trade union facilitated training.

In the UK, the delivery of the TUC's Stage 1 and 2, 10-day courses moved away from trade unions and into public sector organisations, especially Colleges of Further Education. While these developments unlocked resources for training, the required certification raised questions for trade union educators who worried that success on these courses promoted individual expertise in health and safety, which stood at odds with the collective mobilisation strategies of organised labour towards OHS (Walters 1996b). Other challenges were the large numbers of HSRs for training and the high turnover of representatives (Walters 1996b).

One assertion of researchers is that training of HSRs has become overly technical and removed from labour education approaches. Hall (Hall 2006) argued that one outcome of this in Ontario is the emergence of "*knowledge activists"* who may have gained expertise under state sponsored training and from a network of worker health and safety clinics. Storey (2005) argued that the training bureaucracy in Ottawa, Canada has served the purpose of educating workers and of *"freeing"* unions from this responsibility. While on one level this can be seen as representing a class victory, it has not altered power or basic structural inequalities, and therefore the HSR training programmes should be seen as the triumph of technical information at the expense of political education, in other words, *"providing information to solve a technical problem rather than mobilising workers as a central part of the process*" (Storey, 2005: 64). However this may be an over simplified view of what training needs to achieve for HSRs. In contexts where HSRs are trained by trade unions the technical complexity of OHS is a challenge for worker representatives. In Spain, where HSRs regularly received training from trade unions it was found that HSRs despite reporting that they had *"moderate"* knowledge, also reported that they felt overwhelmed by the technical difficulties related to risk prevention (Garcia et al., 2009).

"My problem is there are too many technical terms in the prevention plans presented by the company…We don't have the knowledge of the occupational technicians developing these plans." (Garcia et al., 2009: 85).

In the last fifty years, OHS has overall been party to increasing bureaucratisation and specialisation (Brun and Loiselle, 2002). New technical disciplines such as ergonomics and exposure and safety sciences are fundamentally re-shaping the response of employers and management to OHS risk management. Increasing technical specialisation presents a further challenge to worker indigenous knowledge too, because historically workers have been disadvantaged by the authority of technical and scientific knowledge (Leger and Mothibeli, 1988; Walters, 1985; Wright and Spaven, 1999). For example, Walters (1985) argued that joint health and safety committees had little impact on employer decision-making even when employer representatives are cooperative, because worker representatives are drawn into a web of technical and collaborative discourses that structure their understanding of reasonable risk and budget in ways favourable to management. Medical and other expert discourses can therefore confound workers representatives' capacity to recognise and challenge the presence of hazardous conditions making the training and the preparation of HSRs more arduous given the growing specialisation and complexity of OHS.

There is a dearth of literature about the training of HSRs in low and middle-income countries and especially in Africa. Walters et al (2018b:88 and 113) found safety committee members selected by trade unions on Indian coal mines received no training, and in Indonesia, trade unions were entirely without resources and regulatory support to train and resource HSRs. Given the significant resourcing of HSR training in Western economies in support of pluralist arrangements for worker representation in OHS, unique challenges can be expected in resource constrained Africa with respect to matching training provision to the requirements of the law. Training in resource constrained environments could therefore seriously hinder legislative effectiveness.

2.2.3 The effectiveness and pre-conditions for worker representation

It is established in the literature that a positive relationship exists between the appointment of HSRs (and not necessarily through trade unions) and outcome measures such as improved injury and illness rates (Johnstone et al., 2005; Walters, 2006; Walters and Nichols, 2007). Although studies generally are unable to attribute HSR contribution to specific or quantified improvements (Menéndez et al., 2008). There is also evidence of a trade union mediated effect too, and that workplaces with trade unions on site have improved OHS performance (Morantz, 2013; Robinson and Smallman, 2013). Secondary data analysis of the 1990, UK

Workplace Industrial Relations Survey (WIRS) data (focused on injuries in the manufacturing sector) found it was significantly better to have health and safety committees with at least some members selected by trade unions, than to have such committees with no members selected by trade unions (Nichols et al., 2007; Walters and Nichols, 2007). Reilly et al. (1995) showed that where health and safety joint consultative committees had representatives appointed by unions there was a significant reduction in workplace injuries, in comparison with employer-controlled and non-consultative arrangements for OHS. Convincing evidence of the positive contribution of HSRs to the risk management of major hazards in Australian coal mining was the close alignment of the activities of institutional HSRs (those who work directly for the major trade union) with those of the regulator (Walters, Quinlan, et al., 2016a).

One outcome of the body of research that focused on HSR effectiveness has been the recognition of a set of pre-conditions (refer to Box **2**) necessary to underpin worker representation, which have remained consistent and unchallenged in the worker representation narrative (Walters, 2011; Walters et al., 2005; Walters and Nichols, 2006, 2007). These pre-conditions speak to the role of tripartite partners at the heart of pluralist arrangements. They make explicit the requirement for a supportive legislative steer which includes both legislation and the actions of the regulator; an employer committed to engaging with pluralist arrangements in the workplace; and, well-trained worker representatives able to operate autonomously of the employer, who are supported by an external trade union in this role. A further pre-condition is that worker representatives must be able to reach and communicate with their constituencies. Nichols and Walters (2009) observed that an underlying assumption of pluralist arrangements was that its beneficiaries could ensure the enactment of their role without further support being specified from the regulator or being written into the law. By being unequivocal in their arguments for a set of essential pre-conditions that must underpin worker representation this gap is therefore partially addressed (Walters and Nichols, 2007).

"The legal model on which the development of these regulations was based adopted a set of assumptions about the capacity of their beneficiaries to ensure their application without the further intervention of either the law or the regulatory agencies." (Nichols and Walters, 2009: 28).

Box 2: Pre-conditions necessary to underpin pluralist arrangements for HSRs (Walters and Nichols, 2007: 117).

- A legislative steer
- Demonstrable senior management commitment to OHS and a participative approach and sufficient capacity to adopt and support participative OHS management
- Competent management of hazard/risk evaluation and control by both managers and representatives
- Autonomous worker representation at the workplace and external trade union support leading to informed and well-trained workers representatives
- Consultation and communication between worker representatives and their constituencies.

2.2.3.1 Trade union OHS strategy, pre-conditions and neoliberalism

The pre-conditions for pluralist arrangements have eroded under neoliberalism as trade unions in particular have come under pressure. The revitalisation strategies of the trade union movement in response to their demise under neoliberal policy have largely been silent about OHS and the central question about where OHS activity rests within the trade union strategy is unresolved in many contexts (Loudoun and Walters, 2009). This is not necessarily a new dilemma for trade unions. Storey (2005) pointed to the uneasy relationship between the OHS activists and trade union leaders in the 1970s, who were uncomfortable with the more the radical agenda of activists and the ensuing struggle as to who would frame the OHS issues and ultimately direct the movement.

A study of union representatives in Australia and the UK found that the complexity of OHS issues were well understood from a labour perspective, but that this understanding had not translated into strategy, and that trade unions had a reactive rather than proactive response to OHS (Loudoun and Walters, 2009). An Australian study found a lack of appreciation amongst union officials about the potential of OHS for union activity (Barry and Loudoun, 2006). Although the UK's TUC (2008) had a guide to organising around health and safety, many union officials did not see the benefit of OHS to union mobilisation (Loudoun and Walters, 2009). While some union officials felt OHS may be able to bring in women to the trade union, generally union officials were not happy to bring OHS into their own role when negotiating about the organisation of work (Loudoun and Walters, 2009). Heery and Simms (2008) found that constraints to organising in UK unions were as much shaped by internal as external factors. Internal factors included the lack of resources for campaigns, ineffective

organising methods, active opposition to types of union organisation from groups inside the trade union whose interests were challenged, and management problems with how to absorb specialist organising staff within the trade union bureaucracy (Heery and Simms, 2008). Fairbrother (1996:58) used the term *"Constructive unionism"* to describe shop stewards facilitating their members using union services such as legal facilities and industrial injury claims, in contrast to the adoption of a more radical organising agenda.

Neoliberal policy has not only shaped the response of organised labour in this period, but has contributed to the escalation in certain types of health and safety issues related to the organisation of work. Precarious workers, for example, are repeatedly found to be more vulnerable to poor OHS outcomes (Gunningham, 2008; Johnstone et al., 2005; Quinlan, 2013). Trade unions, however have found it easier to approach OHS as being of a technical nature rather than a component of union strategy with respect to the organisation of work. Workplace stress is a good example of this. *"Precariousness"* has contributed significantly to the escalation of workplace stress, which by its very nature has its origins in workplace arrangements including staffing schedules, production targets and management practice (Walters, 2011). However the questions that have been more likely to preoccupy trade unions have focused around why some individuals are more adversely affected by workplace stress than others, and when does workplace stress become of collective concern? As a consequence, HSRs were found in one study to be ill-equipped to deal with a holistic approach to stress prevention in the workplace, and preferred to provide information about legal standards with respect to work load and/or psychological harassment (Walters, 2011). Thus, where new opportunities have arisen for union activism these have not met with success (Loudoun and Walters, 2009). Walters (2011) argued for *"joined up thinking"* between HSRs who saw the impact of stress in the workplace and trade union shop stewards who negotiate with management about workplace arrangements. This being one possibility for a new approach to trade union OHS strategy.

2.2.3.2 Changes in employer and regulator practices, pre-conditions and neoliberalism

Changes under neoliberalism have not only been observed in trade unions, but in the employer body and with the regulator too and these impact on the necessary pre-conditions for worker representation. Positive employer attitudes towards OHS necessary for workplace pluralism (Milgate et al., 2002; Walters et al., 2005; Walters and Gourlay, 1990) are being replaced with management dominance of HSR arrangements. Frick (2013) describes how the co-operative model between employers and worker representatives, a cornerstone of workplace arrangements in Sweden from the early 19th Century, has been

challenged by international ownership of Swedish companies. A new type of Chief Executive Officer (CEO) accustomed to more adversarial industrial relations has resulted in reduced CEO support for the Swedish model of local cooperation between managers and unions (Frick, 2013).

Worldwide the regulator has consistently been found to apply little enforcement around the arrangements for worker representation usually because inspectors are rarely on site or because they don't routinely interact with worker representatives. (Garcia et al., 2007, 2009; Johnstone, 2009; Walters et al., 2005; Walters and Wadsworth, 2017). Studies point to the low profile of the regulator and that representatives have not been able to rely on the enforcement of their role (Garcia et al., 2007). Johnstone (2009:41) found inspectors did not automatically speak to HSRs during site visits, routinely speaking to HSRs at only 37% of workplace visits. Although this is not the only mechanism by which the regulator has been found to withdraw its support for worker representation. In Ontario, Canada, Storey and Tucker (2006 reported in Lewchuk et al., 2009) described changes to regulator practice that allowed inspectors to deal with work refusals over the phone which as a consequence weakened regulator backing for workplace health and safety arrangements.

2.3 Summary of the global case

The preferred model of worker representation has faced serious challenges in the last fifty years, primarily because neoliberal policy has weakened workplace democracy. Direct participation is as likely an outcome, as participation premised on the collective accountabilities of the *"preferred model,"* under organised labour (Nichols and Walters, 2009). Although there is international evidence of the positive association between pluralist arrangements and OHS performance including the mediated effect of trade unions, this has not protected the space for HSRs (Johnstone et al., 2005; Morantz, 2013; Nichols et al., 2007; Reilly et al., 1995; Robinson and Smallman, 2013; Walters, 2006; Walters and Nichols, 2007). If anything, it could be reasonably surmised that the task of being a representative has become harder. Global evidence shows decisive divisions in HSR activities. There is an enormous disjuncture between the largely operational type of activities of many representatives (such as providing information) and the strategic interventions of a highly skilled cadre of representative who have a first class interpretation of the law and/or specialist information including that sourced independently of the employer (Garcia et al., 2007, 2009; Hall et al., 2006, 2016; Harris et al., 2012; Walters, Johnstone, et al., 2016). The growing bureaucratisation and technical specialisation of OHS contributes to this disjucture too (Brun and Loiselle, 2002). Of specific concern is how representatives who provide

operational support de facto are the *"eyes and ears"* of management or *"safety police,"* given the behaviour-based safety approaches favoured by industry (Blewett and Dorrian, 2011; Walters and Wadsworth, 2017).

Although organised labour historically shaped the training of HSRs once pluralist arrangements entered onto OHS statute this has not been sustained and many HSRs worldwide are no longer exposed to the labour education approaches of the early years of HSR training (Walters and Gourlay, 1990). There is some evidence that trade unions are hesitant to integrate the complexity of contemporary OHS concerns such as those arising from changes in the organisation of work into their mobilising strategies (Walters, 2011), being more comfortable servicing individual union members within a *"constructive unionism"* frame (Fairbrother, 1996: 58). So although pluralist arrangements in OHS are an historical victory for labour, trade unions have struggled to retain a strategic advantage in relation to OHS in a hostile global industrial relations climate.

2.4 South African labour victory and the introduction of the Mine Health and Safety Act

The backdrop to the introduction of the MHSA (Republic of South Africa, 1996) in democratic South Africa is the colonial and apartheid history of gold mining that preceded it. Characterised by its reliance on large numbers of migrant unskilled and semi-skilled labourers this punishing, racist and exploitative work regime is well described (Moodie and Ndatshe, 1994; Wilson, 1972). In the decade before the transition to democracy, there were as many as six major mining disasters alone, with fatalities between 21 and 177 per incident (Hermanus, 2019). Tens of thousands of miners had contracted silicosis in the gold mining industry many without the disease being diagnosed and without receiving the compensation to which they were entitled (Field, 2019; McCulloch, 2016). Studies of black ex-mineworkers in labour sending areas (Trapido, 2000; Trapido et al., 1998) and the on-going analysis of PATHAUT (Pathology Automation System) autopsy data base have continually shed light even today on the extent of lung disease in ex-mineworkers' communities (Murray et al., 2018; Nelson et al., 2010). A silicosis and TB class action case on-going since 2012, secured benefits for tens, if not, hundreds of thousands of affected mineworkers and their families (*BusinessLIVE*, 2018; *Reuters*, 2018; Niselow, 2019, 2019a).

Stewart and Nite (2017) identify two distinct phases of worker participation in OHS on South African mines between 1955 and the end of apartheid era in the late 1980s. Firstly a period of *"fatalism,"* that is then followed by a second period of "*mass action"* (Stewart and Nite, 2017). They contend that worker participation in OHS was initially premised on workers'

"tacit knowledge" of their workplace. This being the experience and knowledge passed on through families and communities, to keep workers safe, described as *"pit sense,"* in other mining studies (Leger and Mothibeli, 1988; Webster and Leger, 1992). Although of value, in the draconian apartheid workplace tacit knowledge failed to reliably protect workers and black mineworkers were as a consequence *"fatalistic"* about their chances of survival, and recognised that luck did run out (Stewart and Nite, 2017). The second phase of worker participation, as identified by Stewart and Nite (2017) was the *"mass action"* of the 1980s anti-apartheid struggle. This was a decisive phase with respect to the pluralist arrangements that later materialised under the MHSA (Republic of South Africa, 1996). A very significant development in 1982 was the launch of the National Union of MIneworkers (NUM). The union personified the *"social movement unionism"* of African trade union liberation struggles with a dual mandate to address members' workplace demands along with a national commitment to the anti-apartheid movement (Moodie, 2010; Von Holdt, 2002). The union was an affiliate of the Congress of South Africa Trade Unions (COSATU) which during the 1980s aligned with the United Democratic Front (UDF) the de facto internal representative of the then exiled African National Congress (ANC) (Desai and Habib, 1994). The pressure exerted by the NUM and the national democratic movement through mass action and the increasing vulnerability of the apartheid state to international pressure and precedent would open the door to pluralist approaches.

Given the high numbers of fatalities on South Africa's gold mines, OHS was a significant concern for NUM members during the anti-apartheid struggle years and advancing the case for health and safety was a NUM priority (Butler, 2007: 162). Butler (2007) describes how the health and safety strategy of NUM took industry by surprise. The union began to respond to major tragedies and smaller incidents by pressing for the full financial losses incurred by mineworkers and their families to be met (Butler, 2007: 162). Strike action and stoppages by workers in the aftermath of mining disasters (Hlobane and Rietspruit colliery 1984 and 1985 respectively) and court applications by the NUM (Driefontein vs NUM 1984) made mine health and safety central to anti-apartheid and union organisation (Leger, 1988). Mobilisation for new membership was on the basis of the union's commitment to address the dire health and safety record under apartheid mining, and membership grew upwards of 360 000 (over 60% of the workforce on the gold and coal mines) by the late 1980s (Crush, 1989: 8).

In collaboration with external activist expertise the NUM prepared important OHS documentation. These included a Bill of Rights concerned with safety (National Union of

Mineworkers, 1986) and a commissioned study into mine health and safety which made the case for worker elected safety stewards and the right to refuse dangerous work (Leger, 1985). On the ground, however, NUM's immediate response to the urgency of health and safety issues at the mine site was to build health and safety structures (Buhlungu and Bezuidenhout, 2008). These were NUM structures composed of NUM members with the sole mandate to mobilise for improved OHS outcomes for workers. (Note, these structures laid the basis for the union health and safety structures found on large mines today and which are referred to in this thesis as the "UHSS". These structures are discussed again in the results Chapters 5 and 6). NUM membership was furthermore serviced through the preparation of written materials that assisted union organisers to respond to the problems of workers on the ground. Hermanus(2019) provides a list of publications written at this time in support of NUM health and safety activity. These publications dealt with topics such as mine accidents, compensation and noise induced hearing loss (NIHL). Produced at the time by the NUM's Health and Safety Department, in association with the Centre of Applied Legal Studies and the Sociology of Work Programme (SWOP) (both at the University of the Witwatersrand) and Learn and Teach Publications. These booklets were translated into several languages making them accessible to mineworkers (Hermanus, 2019).

The staggering failure to address OHS under the apartheid regime should not be misinterpreted to construe that government was not influenced to change its stance to mine health and safety in this period. Two Commissions Erasmus (1976) and Wiehahn (1977) influenced apartheid government action on workplace health and safety. As a consequence of the Erasmus Commission (1976) into occupational health government sought to institutionalise conflict related to OHS in bureaucratic structures hoping to keep it away from becoming the focus for shop floor organisation and in doing so prevent the involvement of the mass of workers (Zwi et al., 1988). The Wiehahn Commission (1977) opened the door for black trade union registration and involvement in industry collective bargaining (Dibben et al., 2015). It recommended that recognition agreements should be in place on mines and that the industrial relations process should be orderly (Butler, 2007: 131). One example of the steps made by government to contain the potential threat posed by OHS to workplace order was the introduction of the Machinery and Occupational Safety Act (MOSA) (Republic of South Africa, 1983). Influenced at the time by the international trend towards self-regulatory mechanisms, MOSA borrowed from Robens' self-regulation. However, it was characterised by its detractors, as "*managerial regulation*" because it gave management the prerogative to appoint worker representatives to health and safety

committees, as opposed to the appointment of *"worker elected"* representatives (Bachman et al., 1989; Pennington, 1985). Pennington (1985) quoting academics at the University of Cape Town, argued that the legislation was an attempt by government to keep OHS outside the collective bargaining framework for wages and other conditions of work, and thus was an approach to institutionalise potential conflict. Although MOSA did not apply to the mining industry, new mining regulations under the Mines and Works Act (Department of Energy and Mineral Affairs, Republic of South Africa, 1988) followed suit, and were considered as a state counter to the demands of the NUM at the time for independent, worker selected stewards (refer to page 34). The regulations set in place arrangements for management appointed safety representatives. They also put in place arrangements for safety officers too, which laid the basis for the introduction of an employer OHS management system. Each mine with more than 300 employees was required to employ a full-time safety officer. Critics of this further example of *"managerial regulation"* argued that the intention behind the new regulations was to transfer the state safety inspection system to mining houses (Bachman et al., 1989). The NUM made a clear distinction between their demands for trade union appointed safety stewards and those appointed under the new regulations. Thus, in the second half of the 1980s during the period of mass mobilisation the NUM embarked on the negotiation of safety agreements, explicitly to secure the election of trade union safety stewards able to represent sections, levels or departments at the mine site.

Botiveau (2017) argues that in this period, although outwardly it was a time of mass mobilisation, it also laid the basis for early collaborative and institutionalised relations between the NUM and industry. The mining industry, in his opinion, having always used the trade union to mediate their relationship with their employees (Botiveau, 2017).

"nascent institutionalisation in the relationship between labour and capital, with some mining houses favouring the establishment of trade unions to mediate their relationship with their employees."(Botiveau, 2017: 15).

Butler (2007: 133-134) echoes this and describes how although recognition agreements were signed, local mine managers would almost always ignore or distort them, because of their dislike for the policy and approach of the corporate head office. Butler (2007:180) describes the early relationship between NUM and Anglo American leadership by describing phone calls between Cyril Ramaphosa (the then NUM General Secretary) and the head of industrial relations at the gold and uranium division. Ramaphosa would call if he had particular concerns about the actions of certain mine managers or sites, and conversely the

Anglo American head would phone Ramaphosa about mineworker violence or indiscipline (Butler, 2007: 180). The reformist stance of the Anglo American Corporation meant they were more open to this type of corporatist model of industrial relations (Crush, 1989). New safety agreements therefore, initially focused on mines owned by Anglo American, but it was the American Newmont controlled Phalaborwa Mining Company who signed the first safety agreement in October 1987 (Leger, 1988). These agreements included training by the NUM, the RRDW, inspections of the workplace led by worker representatives, time off for safety stewards to meet with their constituencies, access to accident sites and permission to take measurements and samples in the mine workplace (Leger, 1988).

- *"Paid time off for OHS training (between 2 and 10 days) provided for by NUM.*
- *Safety grievance procedures for workers wanting to stop work in dangerous conditions.*
- *Safety stewards were to make once a month inspections of the workplace.*
- *Safety stewards to be granted paid time off to caucus safety issues – up to 2 hours a month.*
- *Safety stewards and technical specialists appointed by NUM to have full access to an accident site to conduct in-loco inspections.*
- *Safety stewards were to be permitted to take environmental measurements and samples."* (Leger, 1988: 290–1).

As apartheid reforms took shape and the new regulations (Department of Energy and Mineral Affairs, Republic of South Africa, 1988) allowed for employer appointed safety representatives, both NUM and other progressive OHS activists strengthened their stance on trade union appointed safety stewards. Worker organisation was recognised as fundamental to OHS reform and to the reduction of fatalities.

"To reduce fatality rates in the long term, the NUM requires……..the recognition of safety stewards who are sufficiently trained to ensure management adherence to safe practices. …..Whatever the future of safety on the mines, the advent of worker organisation [NUM] *since 1983 will remain a key feature to instigating long-term reform and challenging unacceptable fatality rates."*(Leger, 1988: 292)

Labour activists were, however, divided about the commitment of the NUM to workplace democracy. In the contested trade union politics of the 1980s, the NUM was considered more populist than the left leaning trade unions who were members of Federation of South African Trade Unions (FOSATU) (Byrne and Ulrich, 2016). The NUM was criticised as an ill-

informed and undisciplined mass union, lacking the necessary shop-floor organisation to advance the longer-term class interests of mineworkers (Butler, 2007: 169). In their defence NUM argued that their shaft stewards were in most respects as robust as the shop steward structures favoured by trade unions in the *"workerist"* fold (Byrne and Ulrich, 2016). Despite these criticisms, Moodie (2015) argues that the secret to the rapid growth of NUM in the 1980s was recognising that mineworkers were members of complex informal networks some of which operated within the compounds in which mineworkers were housed. The union successfully built upon these networks by always, *"consulting with workers and staying in touch with their needs and desires"* (Moodie, 2015: 562). At the end of the 1980s as apartheid reform gathered pace, the NUM was hegemonic over black mineworkers.

During the years of democratic transition, the Leon Commission (1994) into mine health and safety marked a major victory for the NUM and fulfilled a long time demand of the trade union too (Leon, 1995). The 1994 Commission laid out for the record the health and safety performance of mining industry in the preceding century. The Commission concluded its work by recommending dedicated mine health and safety legislation which subsequently laid the basis for the introduction of the MHSA (Republic of South Africa, 1996). The major ideas behind the MHSA were formulated by the NUM and drew heavily on ILO and other international precedents. The really significant shifts in the new legislation were towards process or outcomes-based legislation, risk assessment and the participation of workers in their own health and safety (Hermanus, 2019). Essentially, much of the earlier safety agreements that NUM had introduced onto mines became a requirement of law under the MHSA when promulgated in 1996. NUM leadership quoted in the unpublished thesis by Hermanus (2019) describe how the long standing demand for the adoption of the RRDW, in particular, felt like a massive victory for labour.

2.5 South African worker representation in practice

2.5.1 HSRs their roles and exercise of their powers

The powers of HSRs under the MHSA are aligned with ILO C176 Safety and Health in Mines (ILO, 1995) and those associated with the *"Anglo-European"* model found in Box 1, on page 19. Tables 7 and 13 found on pages 79 and 134 respectively list the actual powers of HSRs appointed under the MHSA and therefore these powers are not listed here.

The introduction of worker elected HSRs under the MHSA was at the outset into complex territory. Worker elected safety stewards had after all been the focus of the NUM engagement with industry at a site level as safety agreements became more commonplace (Leger, 1988). There were also safety representatives appointed by the employer as required

under the 1988 amendment under the Mines and Works Act (Department of Energy and Mineral Affairs, Republic of South Africa, 1988). In fact, a few aspects of this amendment, first introduced in 1988, are still a component of the MHSA found in the regulations for responsible persons, requiring safety officers to see to the provision of training for safety representatives (Reg 2.18.3) and for the safety officer to hold meetings with safety representatives at least once every 3 months (Reg. 2.19.2) (Republic of South Africa, 1996). These few regulations being incorporated into the MHSA, under the transitional Minerals Act (Republic of South Africa, 1991).

Stewart and Nite (2017) introduce a third period of worker participation coming after the period of *"mass action,"* which they call *"incorporation."* They describe how health and safety was invigorated under structural change and the introduction of the MHSA. Divisions however emerged between older mineworkers who relied on their tacit knowledge and a younger generation of mineworkers who were open to the safety rules and bureaucracy of the transforming mine workplace (Stewart and Nite, 2017). It was also the time when expertise that had been made available to the NUM fell away as the NGO and academic network that had worked closely with the NUM disbanded (Hermanus, 2019).

There has been very little empirical research, to understand either the process, or impact, of the introduction of the MHSA (Republic of South Africa, 1996). The Presidential Audit (2008) of South African mines is the only sector-wide measure of compliance, and reported 66% compliance with employee OHS structures across the sector as a whole, although it was acknowledged that small mines were expected to have much lower compliance levels (Department of Minerals and Energy, 2008:58). An audit conducted for the NUM of its health and safety structures during 2014/15 is not in the public domain. The statutory, tripartite Mine Health and Safety Council (MHSC) has to date commissioned very limited research into the functioning of either HSRs or the employer/employee mine health and safety committees. Hence there is very little publicly available information about HSRs under the MHSA. Insight into the well-being of the HSR structure being more often anecdotal, such as the least effective production workers being side lined into being the HSR[1]. Shaw et al. (2010) found in a study of OHS culture that HSRs were excluded from OHS decision making and faced retaliatory actions from the employer in the event of withdrawing workers from a dangerous workplace. It was said that the role of HSRs was not always well understood and they were considered *"company safety officers,"* rather than representatives for workers

[1] Personal communication in 2013 with Mr D. Bakker formerly Chief Inspector of Mines.

(Shaw et al., 2010: 106). Walters et al. (2018a:100) in a study of HSRs in the coal sector reported a mixed picture of FTHSRs some of whom maintained their autonomy, while others seemed to be incorporated into the managerial systems for health and safety working more directly for the employer. By way of comparison, a study of HSRs in the health sector, appointed under the Occupational Health and Safety Act No. 85 of 1993 (Republic of South Africa, 1993) found HSRs were not always appointed as per the legislation, were very unsure of their role, and were unable to discuss their functions as stipulated under the legislation (Kruger, 2012, 2013).

Where opportunity has arisen in industry to involve HSRs more broadly in programmes to address priority health and safety targets this has not met with success, nor been seized upon. The MHSC sponsored Silicosis Elimination Programme (2007) that undertook to build the capacity of HSRs was not widely supported although materials directed at HSRs were developed. Formative research involving interviews with 284 WHSRs concluded that representatives *"almost universally unappreciated"* the advocacy and pro-active role envisaged for them under the MHSA (Mine Health and Safety Council, 2007:4). The industry body, Minerals Council of South Africa[2] (MCSA), Mine Occupational Safety and Health (MOSH) Leading Practice Adoption System that champions sector-wide adoption of evidence based technology and procedures to improve health and safety performance, also chose not to directly involve and build the capacity of HSRs in the participatory processes promoted at mine sites (Hermanus et al., 2015). The 2012, MCSA, external TB reviews conducted in the platinum industry on four of the biggest platinum mines recommended improving employee representation in the development and adoption of TB policies, suggesting representatives are routinely side-lined in important developments (Chamber of Mines, 2013).

Steward and Nite (2017) characterise the contemporary or fourth period of worker participation in health and safety as *"neoliberal individualism,"* describing the introduction of behaviour-based approaches to safety on South African mines that mirror global practice (Frick, 2004; Frick and Kempa, 2011; Quinlan, 2014; Wadsworth et al., 2015; Walters et al., 2020; Walters, Quinlan, et al., 2016b). They argue that the current phase of worker participation puts emphasis on compliance with health and safety procedure with very little opportunity for the expression of worker tacit knowledge (Stewart and Nite, 2017).

Studies of worker experience, of contemporary mine health and safety, find workers are regularly compromised (Phakathi, 2012, 2018; Shaw, 2010; Stewart et al., 2013; Walters et

[2] Previously known as the Chamber of Mines South Africa

al., 2018b). The *"make a plan"* or locally named, *"planisa"* culture revolves around a set of short cuts that workers and/or supervisors may take to meet financially incentivised production targets and this commonly supplants health and safety practice (Phakathi, 2012, 2018). Racism and intimidation of workers by production supervisors constrain workers voicing out health and safety concerns (Shaw, 2010). The sector-wide *"'Culture Transformation Framework',"* organised under eleven pillars includes the impact of production bonuses and the pervasive intimidation and discrimination of workers and is evidence to the adverse culture that hampers effective health and safety practice today (Mine Health and Safety Council, 2011a). Production targets, bonus payments and supervisor intimidation were found to be obstacles for workers in the exercising their right to refuse dangerous work too (Stewart et al., 2013; Walters et al., 2018a: 97).

Phakathi (2012) argues that although this workplace culture has its roots in the social relations that were a product of colonial and apartheid policy and economic strategy, it is wrong to assume that African workers do not autonomously resist this. Informal networks of worker support have historically been found to be used by workers to provide some protection to themselves from despotic apartheid work conditions, especially the type of brutality meted by supervisors (Moodie and Ndatshe, 1994). Informal networks between mineworkers were critical to the meteoric rise of the NUM during the 1980s (Moodie, 2010). Parallels can be seen with the formal exercise of the RRDW too. The formal right being the overt resistance to the dangerous workplace. However, this does not preclude other informal modes of resistance that workers may pursue in order to exercise some control over their immediate workplace (Gray, 2002). The exercise of the RRDW was for example, instrumental at the start of the 2012 platinum strike (Chinguno, 2015; Moodie, 2016). Informally constituted groups of Certified Miners applied the RRDW (section 23 MHSA)(Republic of South Africa, 1996) to decisively slow down production in order to get management to negotiate a wage increase outside the formal wage bargaining structures. Thus in this contemporary phase of worker participation in health and safety, both formal and informal modes of worker action and organisation remain relevant.

Steward and Nite (2017) allude to a sense of worker participation having come full circle. A paradox has arisen. Workers are unable to speak out, or, make decisions about health and safety and production without compromising their take home pay at the end of the month, yet at the same time, hold the full range of regulatory health and safety mechanisms that should protect them. Ironically against this backdrop, workers then face the prospect of

being *"blamed"* for not having left a dangerous workplace in the event of something going wrong (Stewart and Nite, 2017: 265).

2.5.2 The training of HSRs

The NUM first embarked on the training of safety stewards and mineworkers about health and safety from the mid-1980s. Given the unsympathetic apartheid conditions presented to trade unionists records of NUM HSR trainings were never routinely kept and there are no reliable numbers to describe the extent and reach of the early trade union programme.[3] Still NUM training programmes for HSRs continued well into the 1990s and were discontinued as the statutory sector wide arrangements for training provision took shape under the MHSA (Republic of South Africa, 1996).

Under the MHSA (Republic of South Africa, 1996), the training of HSRs has presented a number of challenges to the sector as a whole. The Act does not specify minimum qualifications for being a HSR considered a short coming by Rautenbach and Masilo in their commentary (Masilo and Rautenbach, 2010). Sector estimates in 2010 were that 40 000 HSRs needed training (Chamber of Mines South Africa, 2010: 129; Tuchten, 2011: 172). An initiative of the Mining Qualifications Authority (MQA) to provide this training folded in 2010 with only 10 000 representatives being reported as trained (Mining Qualifications Authority, n.d.). Today the employer delivers HSR training, either through the on-site mine training department, or through an appointed external training provider. In either case, both will be accredited as training providers by the MQA (Chamber of Mines, 2013). Currently, a Skills Programme, accredited at National Qualifications Framework (NQF) Level 2 (equivalent to 3 years of high school) is offered to HSRs (both full-time and workplace HSRs) on their appointment. It consists of three unit standards each requiring approximately five days face-to-face training (Mining Qualifications Authority, 2015). Only one of the three unit standards addresses the functions of the HSR. The other two unit standards are focused on hazard identification and an introduction to health and safety. Given the absence of organised labour from the training of HSRs, it is reasonable to assume that HSR training has decisively moved away from labour education approaches to a more technical understanding of OHS which aligns with the global experience (Hall et al., 2006; Storey, 2005; Walters, 1996b).

A sector-wide study about the training of HSRs commissioned by the MHSC in 2014 is not publicly available. Other South African studies point to serious knowledge gaps for HSRs

[3] Personal communication (November 2019) Professor May Hermanus who was previously the National Health and Safety Officer for the National Union of Mineworkers in the 1980s to early 1990s.

especially with respect to health hazards (Mine Health and Safety Council, 2007), and a failure by the employer to adequately communicate procedure for the exercise of the RRDW to workers, including to HSRs (Stewart et al., 2013). It is also unclear whether the "*tacit*" knowledge of workers on mines (Leger and Mothibeli, 1988) has found a voice in the present training offered to HSRs. Tuchten (2011) found that despite silicosis research indicating serious gaps in HSRs knowledge of their health advocacy role (Mine Health and Safety Council, 2007), the current unit standards failed to demonstrate a commitment to any increased mastery of occupational health or skills related to the HSR role.

"The proposed role of H&S representatives appears extremely demanding, and the associated skills training, outlined in public unit standards, lacks essential elements." (Tuchten, 2011: 212)

Given the extent of the communicable disease burden in mining regions (refer to the section 2.5.3 of this thesis) HSRs are also not accorded the opportunity to develop the essential communication and networking skills necessary for peer education either (Dickinson and Stevens, 2005). Kruger (2013) found the need for on-going practical oriented training with regular follow-ups as a major issue in the training of HSRs appointed in South African hospitals under the Occupational Health and Safety Act (OHSA)(Republic of South Africa, 1993).

In the last two years there have been new developments in the sector to improve the training of HSRs. The NUM have undertaken to produce their own training materials so that they may be in a position to train their members from 2020 who are appointed into the UHSS and as HSRs.[4] The MHSC has commissioned the CSMI to conduct a second training needs assessment of HSRs and to benchmark the present training framework.[5]

2.5.3 The effectiveness of HSRs and OHS performance

There are no studies in South Africa that investigate the actions of HSRs against health and safety performance and therefore the empirical data is very weak with respect to HSR effectiveness. The only available evidence of the value of HSRs is the sector-wide study of the RRDW which found workers were more likely to withdraw from a workplace they

[4] Occupational Health and Safety Manual – For Comment and Piloting: Aligned with SAQA unit standard ID: 259622 Describe the functions of the workplace health and safety representative developed for the NUM by Nancy Coulson at CSMI, at the University of the Witwatersrand.
[5] MHSC Centre of Excellence 180903 "Develop guidelines for recognition of prior learning and training of occupational health and safety representatives and union shop stewards in the SAMI" Commissioned in August 2019.

considered dangerous under the instruction of HSR, than of their own volition (Stewart et al., 2013). The only available approximation for the value of participative arrangements in health and safety is sector-wide OHS performance. The present positive trend towards improved OHS performance under the MHSA, especially related to safety performance, corroborates international research that posits the presence of participative workplace arrangements for representatives with improved OHS outcomes (Johnstone et al., 2005; Menéndez et al., 2008; Morantz, 2013; Robinson and Smallman, 2013; Walters, 2006; Walters and Nichols, 2007).

The most recent review of mining hazards by the International Commission on Occupational Health (ICOH) lists twelve priority areas of health concern; these included accidents, lung diseases, cancers, toxic chemicals, hearing loss, heavy work and musculoskeletal disorders, vibration, heat and cold stress, high altitude and psychosocial risks (Elgstrand et al., 2017a, 2017b, 2017c). In the last two decades, the South African mining sector has sought to make inroads into the major OHS priorities and significant improvements are reported since the promulgation of the MHSA in 1996 (Department of Mineral Resources, 2017; Msiza, 2014; Phakathi, 2016). A major driver of this are the voluntary sector-wide ten-year health and safety *"milestones"* agreed, first in 2003, and then again in 2014 (Mine Health and Safety Council, 2015). Determined through the MHSC Tripartite Safety Summit, these voluntary milestones are used as a reporting benchmark in the sector and target the priority concerns, namely, the reduction of fatalities and injury and the elimination of silicosis and NIHL (refer to Table **2**). Since the introduction of these benchmarks, the sector has reported significant improvement in safety performance and recorded the lowest ever number of fatalities in one year, 76 fatalities in 2016 (Minerals Council of South Africa, 2019b; Msiza, 2014; Phakathi, 2016). The Chief Inspector of Mines has felt confident enough in South Africa's performance to report against other mining benchmark countries such as Australia, USA and Canada (Ontario)(Msiza, 2014) (Refer to Table **3**). The MCSA reported that South Africa's coal mining industry performed better than that of the USA (Phakathi, 2016). However, despite this buoyancy, the voluntary targets are not yet met (Mkhwanazi, 2019). In 2019, the MCSA launched *"Khumbul-ekhaya,"* a CEO focused initiative to drive a step change towards the elimination of fatalities in the sector (including occupational deaths both in and beyond employment) (Minerals Council of South Africa, 2019a).

The sector relies on annual reporting from the MHSI, however there is limited analysis provided in the current reporting format (Department of Mineral Resources, 2017). For example, there is no consideration of the depth at which serious accidents are occurring

and/or how production figures and the decline in the numbers of workers and/or increase in contractor labour is affecting South African mining safety statistics. Hermanus et al. (2019) show that contrary to the positive narrative in the sector about improved safety performance, the steep reduction in fatalities runs in parallel with the decline in the number of mineworkers employed in the gold sector which is an alternative explanation for OHS improvements. The national picture for safety performance is however seriously undermined by the rising number of fatalities and injuries related to illegal mining (Johnson, 2016; Stewart, 2019).

Table 2: Mine Health and Safety Council (MHSC) OHS milestones 2014-2024 (Mine Health and Safety Council, 2015).

Milestones
Safety: Elimination of fatalities
Elimination of fatalities by 2020
Safety: Reduction in serious injury and Lost Time Injury (LTI)
Up to December 2016 20% reduction in serious injury per year From January 2017 20% reduction in LTI per year.
Occupational health: Elimination of respiratory diseases
To eliminate silicosis: By December 2024, 95% of all exposure measurement results will be below the milestone level for respirable crystalline silica of 0.05mg/m^3 Using present diagnostic techniques, no new cases of silicosis will occur amongst previously unexposed individuals
Occupational health: Elimination of NIHL:
Through the quietening of equipment: By December 2024 the total operational or process noise emitted by any equipment must not exceed a milestone sound pressure level of 107 dB(A).
For the individual: By December 2016, no employee's Standard Threshold Shift (STS) will exceed 25 dB from the baseline when averaged at 2000, 3000 and 4000 Hz in one or both ears.
Prevention of TB and HIV/AIDS
Reduction of HIV & AIDS and new TB infections By December 2024 the TB incidence rate should be at or below the highest of either • The national TB incidence rate or • Reduction of new infections in line with the National Strategic Plan (NSP) • 100% of employees should be offered HIV counselling and testing (HCT) annually with all eligible employees linked to an ART programme as per the NSP, and • Promote access to prevention services on TB and HIV & AIDS treatment to families and immediate communities of affected employees

Table 3: South African annual mining fatalities and fatality rate per million hours worked comparison- South African mining vs. mining in Australia, USA and Canada (Ontario) (Msiza, 2014; Phakathi, 2016).

Year	**Reporting period**	**Annual fatalities – South Africa**	**South Africa** – fatality rate per million hours worked	**Benchmark countries (average) -** fatality rate per million hours worked
2003	MHSC 2013 milestones set	270	0.30	0.07
2008	Mid-point for milestone reporting	170	0.15	0.05
2013	End point milestone year reporting	93	0.09	0.05

In contrast to the trajectory for safety statistics, health statistics post 1996 revealed a state of health emergency on South African mines because of the triple disease burden of occupational, communicable and non-communicable diseases. Only very recently have the MCSA and the DMRE-MHSI reported a reduction in the number of cases of occupational disease (Department of Mineral Resources, 2017; Minerals Council of South Africa, 2019a). Of concern have been occupational lung disease and NIHL. Nelson (2013) predicted that the burden of silicosis would continue to rise and that the mining industry had failed to significantly reduce silica dust exposure. A 2012 study of NIHL reported 73.2% of miners were exposed to noise levels above the legislated occupational exposure limit of 85dB A (Strauss et al., 2012). Thus despite the 2003 and the 2014 milestones to eliminate new cases of silicosis and NIHL, miners are still diagnosed with these (Department of Mineral Resources, 2017).

Contemporary workplaces have often successfully isolated OHS from working conditions that may induce poor health and safety, such as workplace stress and related psychosocial issues of which the shift system, working hours and overtime are good examples of this (Elgstrand et al., 2017c). Qualitative studies in the sector identify serious organisational and legacy issues that impact on health and safety including the bonus system, the related indebtedness of miners, the legacy of migrant labour and associated housing crisis and a culture of blame (James and Rajak, 2014; Phakathi, 2018; Shaw, 2010). Retrenched gold mineworkers, for example, may move to the platinum sector as contract labour, who live close to the mine in large informal settlements (Chaskalson, 2016; Makgetla and Levin, 2016). Certainly, despite salary gains over the last decade, South African mineworkers

remain financially stressed and many are heavily indebted (James and Rajak, 2014). Many mineworkers, especially in the gold and platinum sectors, support two families, one living close to the mine and the other in a rural home (Humby, 2016; Rajak, 2016).

Hermanus (2007) identified contract labour and outsourcing as a new challenge for OHS risk and it has become commonplace, especially on platinum mines. Short-term contracts and job insecurity are normal and there is evidence that contract labour is paid less in the same job as counterparts in full-time employment (Forrest, 2015). The introduction of a 10% quota of women into mining, including woman working underground, has introduced a range of gendered OHS issues, such as, sexual harassment, assault and rape, as well as, technical issues, such as, poorly fitting personal protective equipment (Zungu, 2012). The current estimate for post-traumatic stress disorder (PTSD) is believed to present a fraction of mineworkers who may be affected (Zungu, 2013). Thus beyond the 2014 milestones there are a plethora of issues that should concern HSRs.

HIV prevalence and TB incidence in all mining regions of South Africa are found to be above the national adult population average (PHRU, 2017). The sector-wide 2014 targets aim to achieve rates of HIV and TB that are normalised against those reported in the general population (refer to Table 2). Silica-exposed workers who are HIV positive are at multiplicative risk for developing TB, compared to those without silica exposure (Corbett et al., 2000; Naidoo, 2013). HIV and TB also being implicated in the trajectory/incidence of NIHL too (Khoza-Shangase, 2018). As a consequence, gold mining in South Africa has been reported to have the highest incidence of TB in the world, with cases ranging from 3,000 to 7, 000 per 100, 000 miners per year (National Institute for Communicable Diseases, n.d.). Far below these figures the World Health Organization (WHO) recommend that a health emergency should be declared when TB incidence is 250 per 100,000 per year (National Institute for Communicable Diseases, n.d.). Applying figures provided in the latest annual report of the DMR-MHSI it can be crudely estimated that in 2016, across the entire sector at least 1:100 mineworkers were on TB treatment, and 7:100 mineworkers were taking anti-retroviral drugs (ARVs)(Department of Mineral Resources, 2017). On large mines, primary health care services routinely provide HIV and TB testing and treatment services. Estimates in the general population are that diabetes and hypertension are of mounting concern (Mayosi et al., 2009). There is increasing concern about the prevalence of these in the mining workforce too. Both the regulator and the MCSA report increasing numbers of incapacitated mineworkers because of these (Balfour-Kaipa, 2016; Baloyi, 2019; Department of Mineral Resources, 2017).

All of this points to a complex and unresolved health and safety situation on South African mines. It suggests a difficult and arduous task for HSRs. To add to their difficulty on large-scale mines there is often fragmentation between the components of the company OHS system, especially between the occupational health/medical service, the safety department and the occupational hygiene staff. McCulloch (2016) argues that the medical services of the South Africa gold industry have conspired for decades to keep occupational disease hidden. For many HSRs, safety can be expected to dominate over health (Hermanus and Coulson, 2007). A study of the RRDW found that the exercise of this right was more likely to be associated with safety hazards than with the absence of measures necessary to control exposure to health hazards (Stewart et al., 2013). All these realities combined must make a comprehensive picture of health and safety almost impossible for HSRs and may well undermine their effectiveness.

2.5.4 The pre-conditions for worker representation

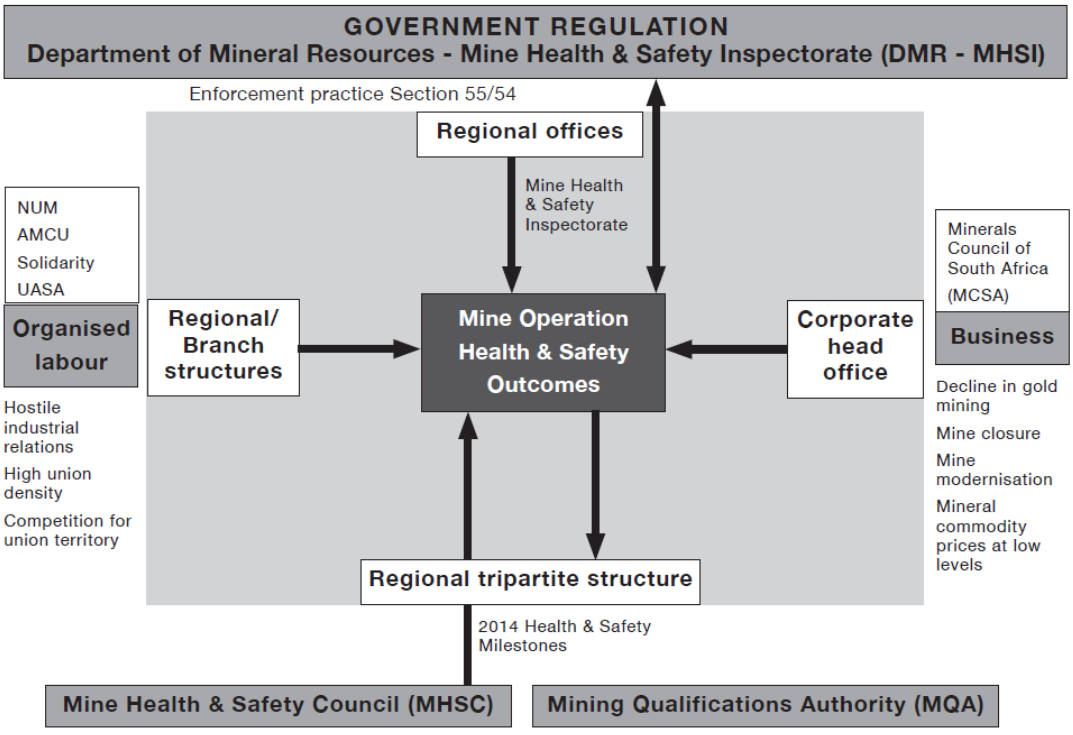


Figure 2: The tripartite structures for mine health and safety as determined by the MHSA No. 29 of 1996 as amended (Republic of South Africa, 1996) and contextual issues.

Figure 2 illustrates the context for mine health and safety with respect to the tripartite partners and formal tripartite bodies. The mine workplace at the centre of Figure 2 has three stakeholders at its boundary; corporate and national industry bodies of which the

MCSA is the most important; the regulator in the form of the DMRE-MHSI and organised labour, of which there are two major and two smaller mining unions. Statutory tripartite structures represented by the MHSC and the MQA, that must be established under the MHSA (Republic of South Africa, 1996) are found on the fourth side. Essentially Figure 2 shows the broader tripartite convolution around the mine workplace.

Overall, the tripartite stakeholders have experienced significant pressures post-apartheid. In this section I discuss relevant developments within the individual tripartite stakeholders (the regulator, industry and organised labour) and within the statutory tripartite health and safety structures of the MHSA, to provide an insight into the existing contextual *'pre-conditions'* as they may affect worker representation.

2.5.4.1 Government regulation

The DMR-MHSI has looked to assert its authority over the mining industry and has adopted firm action to drive improvements to OHS performance. Specifically, the MHSI have regularly issued notices under sections 55 and 54, MHSA (Republic of South Africa, 1996) that permit them to partially, or totally, suspend mining production (Department of Mineral Resources, 2017). This highly controversial move by the MHSI has been fervently contested by industry, the MCSA arguing it lost up to R4.8 billion of revenue in 2015 alone (Chamber of Mines South Africa, 2017: 41). The gold mining company, AngloGold Ashanti took the MHSI to court over the suspension of mining operations. The court ruled in favour of business, despite the inspectorate being backed by organised labour (*Anglogold Ashanti Limited v Xolile Mbonambi and 6 others*, 2016).

The comparative study of HSRs in the coal industry (Australia, Canada, Indonesia, India and South Africa) found that an underlying reason for the differences and limitations in the role of HSRs in representing workers between these contexts (including South Africa) was a much weaker regulatory steer, when compared with that of Australia (Walters et al., 2018a: 99). While the report found that HSRs in South Africa were not entirely isolated from the MHSI, inadequate support was provided to them (Walters et al., 2018b). Presently the MHSI has only issued one new piece of guidance into the sector in support of worker representation, which was issued by the MHSI in 2016 and aimed to strengthen the implementation of the RRDW and is discussed in Chapter 7 of this thesis (Department of Mineral Resources, 2016b). There have been no other guides or codes issued with respect to the role of HSRs.

2.5.4.2 Industry

The overarching narrative with respect to mining in South Africa post-apartheid is the steady decline of the gold sector. This decline is significant and had started already in the late 1980s. There are compounding reasons for why South African gold mining became increasingly unprofitable including poor grade ore quality, the technical challenges and expense of very deep level mining and low mineral commodity prices. As a consequence, gold production output has decreased and mines shafts have closed (Hermanus, 2017). During the period of my research, mineral commodity prices were at historically low levels and industry has been under immense pressure to reduce the costs of mining (Hermanus, 2017; Vogt and Hattingh, 2016). In 2014, the intention of the major narrow-stope, hard rock (gold and platinum) mining companies to mechanise was made public and it is accepted by industry that new mining ventures will not open unless they are mechanised (Vogt and Hattingh, 2016). How to achieve this transition has dogged discussion in the sector and tripartite initiatives such as Operation Mining *Phakisa* (which translated means *"hurry up"*) have not found sufficient traction either (Hermanus, 2017; Hermanus et al., 2019). One argument in favour of mechanisation is the anticipated improvement to health and safety as workers are removed from the rock face, even though the counter argument is the inevitable loss of jobs that will accompany this transition (Sparks, 2014).

To a very large extent under the MHSA (Republic of South Africa, 1996) employer health and safety has been brought into line with international better practice, with the onus on effective risk management and worker consultation. Large scale industry has been sensitive to global developments and companies co-operate with the international voluntary monitoring/reporting initiatives such as the Responsible Minerals Initiative (RMI) (Responsible Minerals Initiative, n.d.), Global Reporting Initiative (GRI)(Global Reporting Initiative, n.d.) and/or implement other management standards such as ISO 45 001, (ISO, 2020). Corporate culture is often expressed in values-based language of which safety is very often the first value articulated as a commitment to *"Zero Harm"* and behaviour-based safety is a commonplace approach to safety management (Hermanus et al., 2015; Stewart and Nite, 2017).

The MCSA has led a number of significant initiatives in the health and safety space too, including a focus on *"visible felt leadership,"* (Hermanus and Coulson, 2007), the MOSH Leading Practice Adoption System (Hermanus et al., 2015), an audit of practices related to TB (Chamber of Mines, 2013), the launch of the *"Masoyise Health Project"* (Baloyi, 2019) and the CEO initiative *"Khumbul-Ekhaya"* (Minerals Council of South Africa, 2019a). Some of

these initiatives are reportable under the sector-wide voluntary '*Culture Transformation Framework'* (Mine Health and Safety Council, 2011a) which was for a time made mandatory under 2015 Mining Charter (Department of Mineral Resources, 2015) (note reporting is not required under the 2018 Mining Charter 3 (Department of Mineral Resources, 2018)). Yet in spite of these developments the employer is not trusted by other stakeholders (neither by organised labour, nor by the DMR-MHSI) (Hermanus et al., 2015). For example, there is no appetite in industry for public reporting of the worst performing mining companies and operational sites (Hermanus et al., 2015).

There have been no studies in the sector to investigate employer attitudes and experience of worker representation. Thus, there is no empirical evidence of whether there is *"demonstrable"* management commitment to the participative approach to health and safety (Walters and Nichols, 2007). Neither is there evidence of whether sufficient capacity exists to adopt and support consultative health and safety management which is found in global studies to be a necessary pre-condition to underpin worker representation (Walters and Nichols, 2007) (Refer to Box 2).

2.5.4.3 Organised labour

Today there are four mining trade unions; the NUM, its more militant trade union rival, the Association of Mineworkers and Construction Union (AMCU) and two smaller artisan and supervisor unions, Solidarity and UASA (formerly the United Association of South Africa), both of which historically had their membership base amongst white mineworkers. Mining has remained a well unionised sector, estimates are that 80% of mine employees are unionised (Bhorat et al., 2014: 5). However post-apartheid, the NUM has lost considerable ground. In 2017 of the estimated 450 000 mineworkers (Chamber of Mines South Africa, 2017a), the membership figures for NUM were down by as much as 132 000 over the previous five years to only 176 000 (Mahlakoana, 2017a).

Post-apartheid, an alliance between the ruling ANC and COSATU (in which the NUM was the largest union) ensured that the NUM moved from apartheid struggle politics to a role engaged with the national politics of reconciliation (Botiveau, 2017). The 2012, politically explosive strike in the platinum industry during which 34 mineworkers were massacred by state police forces, provided insight into the comfortable relationship that had materialised between the ANC state, the mining industry and the NUM (Chaskalson, 2016). The violence associated with the strike was a shocking reality check for post-apartheid South Africa (Chinguno, 2015; Sinwell, 2015). Von Holdt (2010: 147) was proved correct having argued that a *"persistent ambivalence,"* to the institutionalisation of industrial relations by the state,

employers and trade unions, would make violence more likely. The NUM was as a consequence accused of class betrayal and described as *"neo-corporatist"* and *"institutionalised,"* (Alexander, 2013; Chinguno, 2015). The membership of rival trade union AMCU grew rapidly from 23, 000 in January 2012, to 150 000 by November 2012 (Chinguno, 2013: 645).

The reasons behind the demise of the NUM's hegemony have been the focus of serious academic review. There are several arguments used in explanation of this and these are raised here because the type of trade unionism practiced by the NUM will have been highly influential with respect the arrangements for worker representation in health and safety. In summary, these accounts have focused on the rapid exposure of the NUM to external factors in the global environment and the type of politics practiced inside the union both in the 1980s struggle years, and in the early transition to a democratic state.

The first explanation considered the role of African trade unions in the post-colonial settlement and the transitional juncture between apartheid and post-apartheid labour organisation. Trade unions were abruptly exposed to the globalised neoliberal market, which came with new challenges and seriously undermined trade union strength (Chinguno, 2013; Theron, 2003). Botiveau (2017) describes this as the *"SWOP hypothesis"* as many of the central writers came from the leading labour research unit at the University of the Witwatersrand.

"'SWOP hypothesis,' was the idea that trade unions in a free and democratic society now enjoyed considerable room to manoeuvre and press for change, while paradoxically being constrained and threatened, and eventually weakened by new external challenges – neoliberal globalisation in particular – which undermined their internal organisation and their political capacity." (Botiveau, 2017, p. 12)

Botiveau (2017) posits a second argument. He suggests that factors that led to the decline of the NUM were internal rather than external, and that it was their practice of democratic centralism, that has not served the union well in the post-apartheid context. While democratic centralism assisted the NUM to respond to the brutality of the apartheid regime, post-apartheid it failed to keep the union close to worker concerns on the ground (Botiveau, 2017). Botiveau (2017) describes democratic centralism as the type of politics that discriminates between political foes and friends setting one up to contain and silence the other, and that inevitably undermines internal trade union debate and the practice of workplace democracy. Butler (2007: 181) described how NUM leadership even during the

1980s struggle years, were at points removed from workers on the ground. Thus tensions that were already in existence between centralist leadership and worker control dated back to the union's very beginning and went unchanged in the post-apartheid context.

Thirdly, Moodie (2016) argues that post-apartheid black mineworkers became stratified as workers were able to advance into management and artisan roles. Being appointed as a full-time shop steward became a stepping stone to the employers' human resource department, and thus, the NUM increasingly represented the interests of the better-paid, and better-educated worker (Moodie, 2016: 855). The careerism of shop stewards in the post-apartheid dispensation is well documented (Buhlungu, 2001; Buhlungu and Bezuidenhout, 2008; Moodie, 2016). Buhlungu (2010) describes activism post-apartheid is being shaped by individualism and a quest for upward social mobility. One personal account described how the NUM engaged their membership under the slogan*, "organise to advance."*[6] As a result of these changes, the NUM struggled to engage robustly with employers on issues pertaining to work reorganisation because of weak shop-steward leadership. Shop-steward leadership was characterised by internal conflicts in the NUM, careerism, corruption, succession battles and tribalism or ethnicity (Buhlungu and Bezuidenhout, 2008). Essentially an internal "*crisis of representation*" arose which meant union membership experienced a decline in the quality of services offered to them (Webster and Buhlungu, 2004). It marks a departure from the global picture of *"constructive unionism"* found in highly-industrialised contexts which has centred on the servicing of membership (Fairbrother, 1996).

A fourth underlying reason is the historical weakness of the NUM in the platinum sector. Post-apartheid as the gold sector has been in gradual decline, platinum has come to prominence. A web of socio-structural factors including historical obstacles associated with apartheid homeland policy, the post-apartheid escalation in informal housing around platinum mines as apartheid single sex mineworker hostels closed, and the exponential rise in contract labour meant it has always been a more difficult sector in which the NUM could successfully organise (Chaskalson, 2016; Chinguno, 2013). Labour organisation in platinum in the last three decades has centred on informal networks and small trade unions, of which AMCU was one (Moodie, 2015; 2016). Moodie (2016) describes informal associational networks embedded in the rural structures of migrant workers or occupational groupings in the workplace as alternative sources of solidarity between workers. Stewart (2013) found

[6] Workshop discussion IndustriAll Global Union's sub-Sahara Region ILO Convention 176 Ratification and Implementation Workshop 22-23 August 2019.

that mining strike action could be informally organised and rooted in the mining labour process. In 2011 and in 2012, independent committees of rock drill operators took on both management and the NUM in their demands for wage increases (Stewart, 2013). Later AMCU capitalised on these informal networks and began to act in a formal capacity on behalf of these independent structures (Chaskalson, 2016).

The emergence of AMCU on South African mines has presented a serious challenge to the NUM. Inter-union rivalry has been found to be a significant test for contemporary mine health and safety practice (Stewart, 2019; Walters et al., 2018b). Stewart (2019) for example, describes how the distribution of personal protective equipment (PPE) became a form of retribution as members of rival unions were disadvantaged by HSRs and UHSS. The mine health and safety agreement underpinning the representative arrangements under the MHSA (Republic of South Africa, 1996) is premised on one dominant trade union with other minority unions per mine site (Masilo and Rautenbach, 2010). The presence of two major unions on one site as is now happening is unprecedented and uncharted territory. AMCU with its origins in insurgent forms of trade unionism has limited capacity and experience of formally servicing membership demands around health and safety and neither has it had the NUM history of mobilising and recruiting membership around OHS. International pre-conditions for worker representation rely on external trade union support including training, consultation and communication between worker representatives and their constituencies (Walters and Nichols, 2007) (Refer to Box 2). Thus the preparedness of AMCU for this role should be under question. Stewart (2019) describes the early retirement of mineworkers in the platinum belt because they were poorly represented by AMCU. However AMCU has absorbed large numbers of disaffected NUM membership some of whom will have had experience of the participative arrangements for OHS which should provide the basis for some AMCU capacity in this regard.

In the post-apartheid context NUM's weaknesses appear to hamper the prospects for worker representation in health and safety. The NUM chose not to place their 2014/15 audit of their health and safety structures in the public domain. The corporatisation of NUM suggests that health and safety shop stewards may also not be sufficiently independent of the employer. Walters et al (2018a) found a more encouraging picture when conducting interviews with NUM shop stewards and FTHSRs in the coal sector. They found that representatives could describe the support they expected to get from the institutional structures of the trade union, both on and off the mine (Walters et al, 2018a). Thus, there is likely to be a spectrum of experiences with respect to the NUM and worker representation

across mine sites and mining commodities. During the democratic transition of the early 1990s, many trade union *"workerists"* from the FOSATU tradition were drawn into the ANC and the South African Communist Party (SACP) because at the time workerist positions lacked adequate strategy to support the rapid transformation that was occurring in South Africa (Byrne and Ulrich, 2016). The massacre of workers in the platinum belt in 2012 was decisive for the more left leaning trade unions. The National Union of Metalworkers of South Africa (NUMSA) broke away from the NUM dominated COSATU to establish a new trade union federation committed to workplace democracy (Byrne and Ulrich, 2016). NUMSA has recently begun to make inroads into the mining sector although it has not yet been formally recognised in the tripartite MHSC. Potentially this is an important development as NUMSA refocuses attention on workplace democracy which is supportive of worker representation in health and safety.

Lastly, whereas the trade union revitalisation debate in highly-industrialised countries has centred on strengthening the existing trade union organisation, in South Africa new modes of collectivism are emerging that seek to include the mobilisation of contract and informal workers, and the unemployed (Webster and Buhlungu, 2004; Webster and Englert, 2019).

"*There is a need to go beyond traditional union structures to explore imaginative ways of engagement with the unemployed, the 'new working poor', their own members, employers, governments, the new social movements and labour movements in other countries."*
(Webster and Buhlungu, 2004: 230)

This contemporary development in South Africa offers opportunities for worker representation in health and safety for the future. Stewart (2019) argues that informal mineworkers and communities whose health and safety are put in jeopardy by mining operations are badly in need of OHS representation, alongside working mineworkers. Thus there is nascent evidence that worker representation could evolve over time in order to respond to both the fluid context of the mining workplace and to address the significant health and safety priorities outside the immediate formal workplace. It certainly lays the basis for the possibility of new models of health and safety representation within middle-income contexts.

2.5.3.4 Formal tripartism

Statutory tripartism is expressed through the MHSC and the MQA, both of which are bodies established under the MHSA (Republic of South Africa, 1996) (Refer to Figure 2). Both bodies have governance Boards that have representatives from industry, organised labour and the

regulator and in both cases the Board is chaired by the Chief Inspector of Mines. Prior to the drafting of the MHSA, the Leon Commission (1995) raised concerns about stakeholders having naïve expectations of tripartism. Leon (1995:53-54) foresaw considerable obstacles such as economic, education and cross-cultural gaps between managers and workers. A recent review of statutory tripartism in the South African mining sector for the Centenary of the International Labour Organization (ILO) found limitations had indeed arisen. The MHSC was found to be unable to lead on key challenges in the sector such as health and safety imperatives for the modernisation and mechanisation of the industry, or provide a more compelling critique of the reported improvements to OHS in the sector (Hermanus et al., 2019). The Council had also failed to resolve the legacy payments owed to hundreds of thousands of mineworkers disabled and dead because of silicosis contracted whilst working on South Africa's gold mines. Instead this has been settled through a class action case taken to the South African courts (*BusinessLIVE*, 2018; *Reuters*, 2018; Niselow, 2019, 2019a). In summary, the review found that tripartite stakeholders have preferred to engage in voluntary structures set up under sector-wide initiatives rather than operate under the formal mechanisms for tripartism found in the MHSC and MQA (Hermanus et al., 2019).

The MHSC has paid little attention to worker representation and consultation in their research programme. As has been said earlier only one report addressed HSR training and is not publicly available. There have been no additional guidelines or codes of practice written in support of HSRs. More attention has been given to the implementation of the RRDW and this has resulted in sector wide guidance that is discussed in Chapter 7. The training of HSRs has relied on the MQA in the last decade. Organised labour has not been resourced through the MQA to train their own representatives and members with respect to mine health and safety.

Capacity for tripartite engagement has been built at the regional level to respond to the emergence of health and safety challenges on the ground. Voluntary regional tripartite structures are now established having found support through a tripartite-stakeholder initiative facilitated through the CSMI (Hermanus et al., 2010). The MHSI is now meeting on a regular basis with employer representatives, the UHSS and FTHSRs from different mines located in one geographical region, reflecting the degree to which health and safety priorities and concerns are generalized throughout the industry.

At the site level, there is a dearth of information about the functioning of the mine health and safety committee. In-depth interviews on coal mines, with the NUM UHSS and FTHSRs found

that management were reported to use the joint employer/employee mine health and safety committee largely as, *"their committee rather than one jointly constituted"* (Walters et al., 2018b: 154). Co-operative employer/employee forums in other South African industrial settings, comparable to the pluralist arrangements in health and safety are argued to have collapsed (Bischoff et al., 2018; Masondo, 2010). Bischoff et al. (2018) describe the failure of democratic South Africa to shift towards more participatory and co-operative relations away from adversarial class struggle approaches with racial overtones. Workplace Forums under Chapter 5 of the Labour Relations Act No 66 (1995) (Republic of South Africa, 2002) laid the basis for more participatory structures in the workplace, the intention being to develop information sharing, consultation and joint decision-making related to production which resonates with the intention behind the mine health and safety committee (Bischoff et al., 2018). Masondo (2010:105) found that shop stewards in a car automation plant believed this type of co-determination had not worked, and that mistakes in the workplace should be those of management alone. Team talks convened at the start of weekly work shifts were also rejected by shop stewards, because it was believed supervisors did not respond to issues raised by shop stewards on a weekly basis, which left them feeling disillusioned and frustrated (Masondo, 2010: 103). Consequently institutionalised co-determination was considered to have failed, *"the labour movement has opted for engagement with employers on the basis of a union agenda and union independence in order to transform and democratise the workplace."* (Bischoff et al., 2018: 16)

Thus adversarial rather than co-operative relations between the employer and organised labour can be expected to continue to shape engagement including that related to health and safety.

2.6 Summary of the South African case

In keeping with the global case the introduction of worker elected HSRs was a victory for labour. Thereafter the Leon Commission (Leon, 1995) laid the basis for the formal adoption of worker representation under the MHSA (Republic of South Africa, 1996). Post-apartheid trade unions in South Africa have struggled with the same types of exposure to neoliberal globalised markets as trade unions elsewhere. Contemporary worker participation in mine health and safety is characterised by Stewart and Nite (2017) as *"neoliberal individualism,"* which resonates with the direct participation of HSRs in the employer OHS management system (Nichols and Walters, 2009; Wright and Spaven, 1999) and/or the presence of *"safety-police"* (Blewett and Dorrian, 2011) described in the global workplace. The mine employer imitates international OHS trends, in their adoption of risk management

approaches including behaviour-based safety and the side-lining of worker representatives in sector-wide initiatives, such as MOSH (Hermanus et al., 2015).

However, contrary to global experience and in spite of the growth of contract labour in the mining sector, trade union density has remained high (Bhorat et al., 2014). The major development being the emergence of the more militant trade union AMCU to rival the dominance of the NUM (Chinguno, 2013; Moodie, 2016; Sinwell, 2015). The NUM has a history of successful mass mobilisation around health and safety (Leger, 1988), but in the period framed by the MHSA (Republic of South Africa, 1996) the once hugely powerful and influential trade union has been at its weakest (Mahlakoana, 2017a). Of particular note is the extent to which the NUM leadership and shop stewards have grown distant from their membership (Buhlungu, 2010; Webster and Buhlungu, 2004). Given the subsequent contest for labour territory it is pertinent to consider what is happening for worker representation in mine health and safety.

South African HSRs operate within the post-apartheid mine workplace that has a history embedded in the apartheid economy and the migrant labour system. Mining today still struggles to overcome its legacy issues such as class and racial divisions (Hermanus et al., 2012; Shaw, 2010). Presently there is very limited empirical evidence of the role of HSRs and/or description of whether HSRs can operate effectively within this context. HSR preparation and training has moved away from the earlier labour education approaches of the NUM to a more technical focus implemented through the employer and accredited by the statutory MQA (Mining Qualifications Authority, 2015) which mirrors international precedent (Walters, 1996b).

The exercise of pluralism in the workplace relies on an effective relationship between the tripartite stakeholders for which there is a set of pre-conditions necessary to sustain worker representation (Walters and Nichols, 2007) (Refer to Box 2). In South Africa, the evidence about this is contradictory. There have been dramatic and complex developments in the tripartite stakeholders. Certainly the stakeholders are regularly engaged, yet the relationship is deeply conflictual. The steady decline of the gold sector and the push for mine modernisation has changed the sector (Hermanus, 2017; Vogt and Hattingh, 2016), as has the emergence of a rival trade union to the NUM (Chinguno, 2013; Moodie, 2016; Sinwell, 2015). The imposition of section 54 closures by the regulator on non-compliant mines has been hugely controversial in the sector (*Anglogold Ashanti Limited v Xolile Mbonambi and 6 others*, 2016; Chamber of Mines of South Africa, 2017: 41). Despite the regulator

strengthening their access to HSRs and UHSS through the introduction of voluntary regional tripartite forums, no guidance has been issued into the sector about their role beyond that found in the MHSA and related regulations. Only a mandatory code of practice with respect to the implementation of the RRDW has been issued in the last five years (Department of Mineral Resources, 2016b).

2.7 Gaps in the evidence base

My literature review found very large gaps in the South African evidence base. Principally this is because there is very limited empirical data about the arrangements for worker representation in middle-income countries and in Africa. The South African history of worker elected HSRs shares features with the global narrative of worker representation in highly-industrialised countries, such as its reliance on the mobilising strength of organised labour to secure progressive legislation, and the subsequent bureaucratisation of OHS and HSR training that occurred concurrently under the MHSA (Republic of South Africa, 1996). Nevertheless, there is very limited empirical data about the role of HSRs appointed under the MHSA, and whether South African HSRs experience the dominance of the employer and the reduced collectivism in health and safety of the last three decades reported worldwide.

While there has been significant formal investigation into trade unions in the post-apartheid context (Buhlungu, 2010; Buhlungu and Bezuidenhout, 2008; Moodie, 2010; Moodie, 2016; Sinwell, 2015) this has not specifically investigated trade union experience of OHS. This is a gap in the literature given the mobilising success of the NUM around OHS in the 1980s (Butler, 2007; Leger, 1988; Stewart and Nite, 2017).To date there have been no specific studies about the role of the UHSS and/or shop stewards in health and safety. There are no research studies detailing either the role or experiences of HSRs and shop stewards in the investigations and inquiries that must take place in the event of reportable incidents and fatalities.

Lastly the absence of any information about the functioning of the mine health and safety committee also hampers our understanding of the representative role of HSRs and trade union shop stewards.

Chapter 3

3 Methodology

This Chapter describes the two studies undertaken to address my three research objectives. The bulk of my thesis research relied on data drawn from in-depth descriptive case studies. The case study research aimed to answer two research objectives:

Objective 1: Explore the selection, preparation and day-to-day experience of being a HSR.

Objective 2: To assess the communication and interactions of HSRs within the broader system of OHS management as envisaged by the MHSA including the mine health and safety committee, the regulator, company OHS system, first line supervisors, organised labour and production teams).

The third research objective was investigated by conducting secondary data analysis of a concurrent mixed-methods (quantitative and qualitative) study about the implementation of the RRDW (Cooper, 2013; Stewart et al., 2013). This study was commissioned by the MHSC and was completed by CSMI in 2013.

Objective 3: To investigate worker experience of the implementation of the right to refuse dangerous work (RRDW).

My methodology Chapter firstly traces the development of the conceptual framework for my thesis and then describes the methodologies of the two studies that constitute my findings. Care is taken not to repeat methodological details that are found in the results Chapters 4, 5, 6, and 7.

3.1 Theoretical framing

Theory making is important in case study research (Yin, 2014). Although the MHSA (Republic of South Africa, 1996) determines the organisation and the powers of HSRs my overall theoretical framing is best described as a *'production politics'* perspective in which OHS is an outcome of the production process in modern industrial society (Burawoy, 1979). Nichols and Armstrong (1973) have described the major regulatory problem in an industrial workplace as being how to oppose the pressure to prioritise production over safety. It is within this milieu where production is central to the business of mining that I situated my study. My study interrogates the interface of the role players to both the production process and that of OHS. This is because OHS hazards are an outcome of the production process and therefore OHS cannot be abstracted from the production imperative.

Menéndez et al (Menéndez et al., 2008:11) provided a valuable framework for my thesis research. Their model which arose from research conducted with HSRs in Europe identified five elements related to the strategies and activities of HSRs (Menéndez et al., 2008). Significantly their model made a direct link between what happens for HSRs in the workplace and the factors in the broader environment that impact on their effectiveness (refer to Figure **3**). In their model, the national or regional level is where social and political drivers are found which include the condition of the labour market, the nature of legislation and importantly, the position of organised labour. At a sector and industry level the major factors lie within the specifics of a sector/industry/operation, the branch level labour structures and in the workplace. All of these elements have a relationship to exposure, risk factors and health outcomes in the workplace (Menéndez et al., 2008). The model (Menéndez et al., 2008) while accommodating the production politics perspective, showed that production pressure is itself, framed by the wider conditions in the economy, the limits to legislation and the regulatory environment and the strength and influence of organised labour. This resonated with the *"pre-conditions"* that have been argued in the global literature to necessary to support effective worker representation (Walters and Nichols, 2007). This thinking influenced my decision to adopt an approach to my research that could accommodate factors that may lie beyond the immediate workplace as relevant to the representative role of HSRs. Thus my approach considered both the internal workplace and external factors that may impact on the activities of HSRs on underground mines in South Africa.

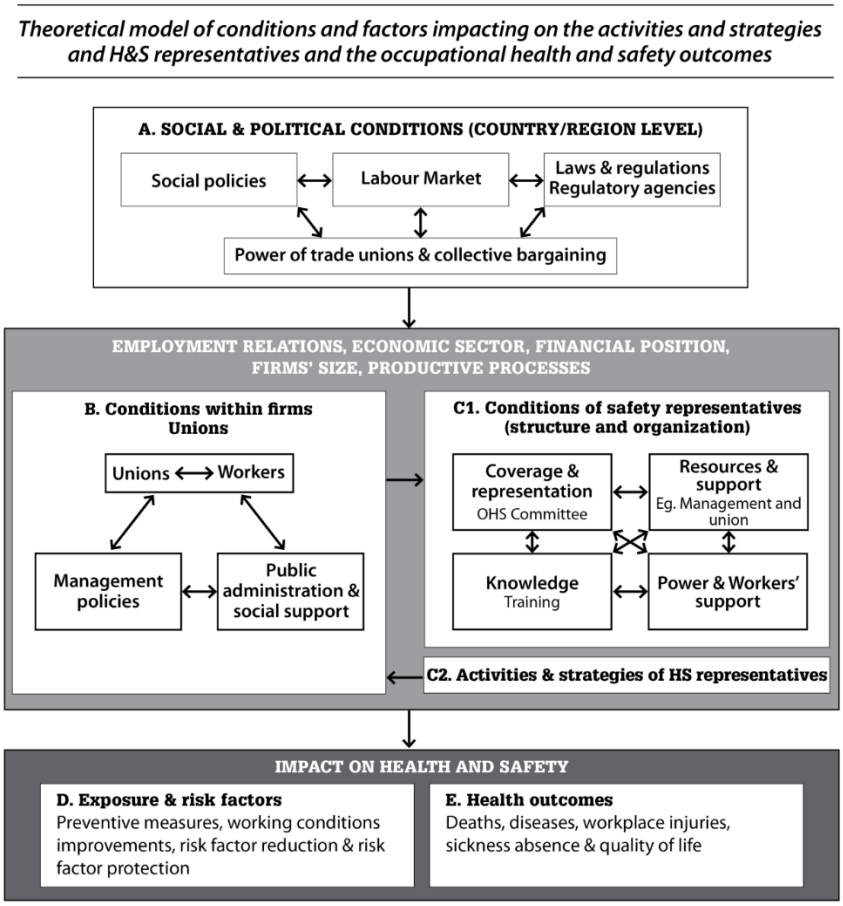


Figure 3: Theoretical model of the conditions and factors impacting on the activities and strategies of HSRs and the occupational health and safety outcomes (Menéndez et al., 2008:11).

3.1.1 Conceptual model thesis study

The MHSA (Republic of South Africa, 1996), as described in Chapter 1, outlines an OHS system of which HSRs are a component. The HSR interfaces primarily with three main groupings; the production process (through worker teams, first line supervisors and through supervisors to mine management); the employer OHS system (including mandatory employer appointments in safety, occupational hygiene and occupational medicine (Refer to Figure **1** in Chapter 1)); and, shaft/branch structures of organised labour. Figure **4** illustrates my conceptual framework. It shows how the majority of HSRs appointed under the MHSA are situated within production teams in the underground mine workplace with rights to engage with several role-players including their own constituency of workers and with organised labour, the mine health and safety committee, the employers' health and safety

appointments and with front line supervisors and production management. Figure 4 captures *'the case'* I set out to describe and critically interrogate at four study sites. The conceptual model has two borders one for site level health and safety outcomes and the other for the external tripartite context. This is because all the role-players with whom HSRs interface contribute to the internal factors that shape mine health and safety outcomes, but are themselves are impacted by the external tripartite context. Figure 2 (on page 45) in the previous Chapter provides a summary of major institutional bodies and factors that shape the tripartite context under the MHSA.

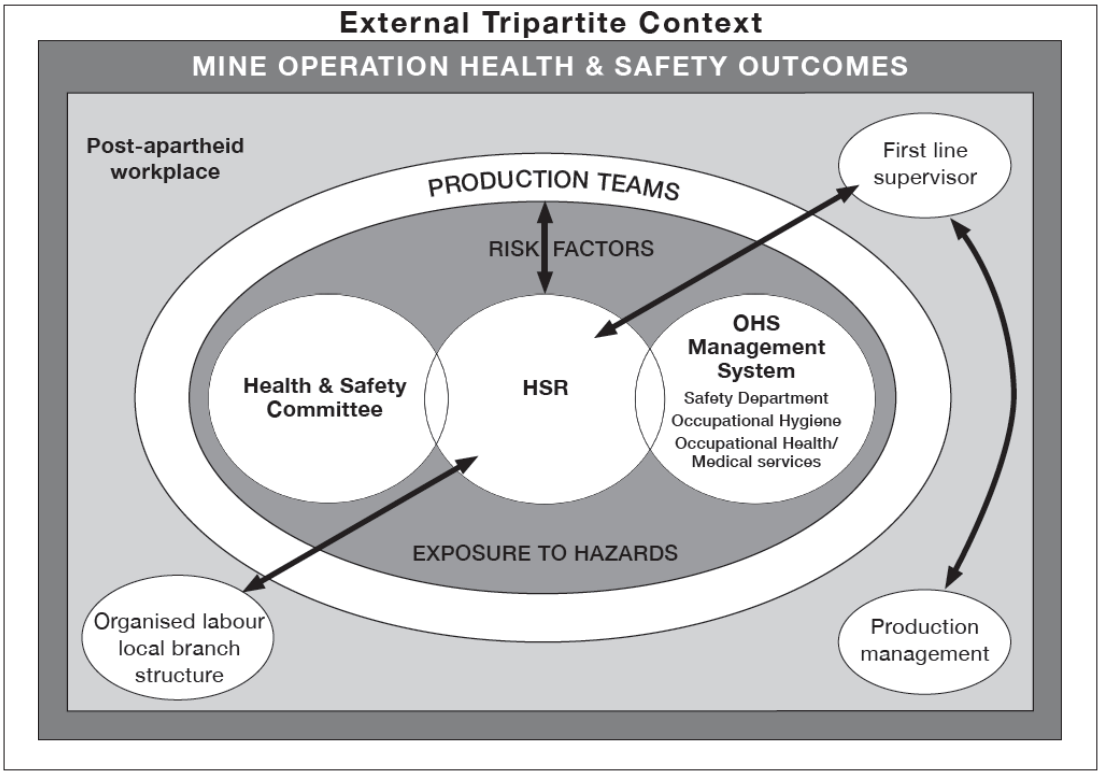


Figure 4: The conceptual framework for HSR case studies; HSRs and their interaction with the OHS system as envisaged under the MHSA in the post-apartheid mine workplace and sector.

3.2 Study design

3.2.1 Case study research

Case studies are certainly one choice open to qualitative researchers (Cresswell et al., 2003). Yin (2014), who has largely set the standard for case studies suggests that a case study is empirical research that *"investigates contemporary phenomenon"* within its *"real world context"* (Yin, 2014: 16). Case studies being especially useful when the boundaries and interface between the *'phenomenon'* and the *'context'* are not so clearly evident, usually relying on multiple sources of evidence (Yin, 2014). In my study, the *'phenomenon'* or *'the case'* was the introduction of worker elected HSRs under the MHSA. However it was the

impact of the broader *'context'* which at the outset was so unclear, but markedly important if other work was to be drawn upon (Menéndez et al., 2008; Walters and Nichols, 2007). Whereas quantitative surveys have limits to the number of questions that can be asked, a case study is considered all-encompassing. As a method of inquiry, it not only determines the design and the data collection methods, but also the analysis. The research inquiry being dominated primarily by *'how and why'* research questions (Yin, 2014). The case study approach provided me with the opportunity to describe, explore and explain the *'how'* and *'why'* of the representative role of an HSR, as it happened in practice, without presuming at the outset to know what I would find. I selected a multiple case study design (four sites) so that the evidence could be considered compelling (Herriot and Firestone, 1983). My case study sites were literal replications and shared a set of similarities (Yin, 2014). These similarities were ensured through the selection of the study population and sample discussed below in section 3.2.3, and in the data collection process discussed in section 3.2.4. The underlying goal being either that I would achieve the *"literal replication"* of results across sites, or that the case studies would provide *"theory"* that can predict either similar or contrasting findings across mine sites (Yin, 2014).

3.2.2 Concurrent mixed methods study

For Objective 3, I used data from the concurrent mixed method study of the RRDW that was commissioned by the MHSC prior to the start of my PhD (Cooper, 2013; Stewart et al., 2013). I was the co-principal investigator for the study together with Professors Carol Cooper and Paul Stewart at the University of the Witwatersrand. It was a sector-wide, cross-sectional study that relied on concurrent-triangulation methods (Cresswell et al., 2003) and was conducted on mines that extracted gold, platinum and coal (and other) commodities. The original study included a survey of mineworkers (both production workers and supervisors/management) and focus groups with production workers and key-informant interviews with representatives of organised labour and HSRs (Stewart et al., 2013). Given the role accorded to HSRs in the exercise of the RRDW (MHSA section 23(b)) I decided to complement my case study research by conducting secondary data analysis, focused on worker responses only. This discrete piece of work is discussed in Chapter 7 (Coulson et al., 2019). Essentially secondary data analysis was conducted using Excel (Microsoft Office 2013 version 15) with triangulation of qualitative data.

3.2 3 Study population and sample

Four case study sites were purposively selected. All sites were large underground mines with more than 500 employees on site. This ensured that both workplace and full-time HSRs were

appointed at each site (note: a WHSR must be appointed once there are 20 employees (MHSA Section 25(1)), a FTHSR once there are more than 500 employees on site (MHSA Section 26) (Republic of South Africa, 1996)).

The MCSA (formerly known as the Chamber of Mines) provided a list of member companies dated 2014 that was used to identify global senior and intermediate mining companies (ICMM, 2012). Senior and intermediate mining companies have an established presence in South Africa and have had exposure to international sustainability guidance and OHS legislation in other jurisdictions that maybe similar to South Africa, such as in Australia or Canada. Therefore it could reasonably be expected that they would have embraced the arrangements for worker representatives under the MHSA (Republic of South Africa, 1996). The selection of the final case study sites was in part random, and in part, convenience sampling. The names of five senior/intermediate mining companies with underground mining operations in two provinces were randomly selected from a hat. Budget restrictions, limited the amount of travel available for fieldwork and therefore data collection was limited to two provinces only. Five mining companies were approached on the basis of being randomly selected from the 2014 list. Permission to conduct research was first obtained from the corporate head office and thereafter a meeting took place on site, between myself, the health and safety manager and trade union representatives. Three sites agreed to participate as a result of this selection process. The fourth case study site was identified through the personal contacts of researchers. I elaborate further on research reflexivity in Chapter 8, in section 8.4 when considering the limitations and strengths of my research. The final selection of case study sites included two global senior mining companies with asset bases of US$ 3 Billion and above, and two intermediate mining companies with asset bases of US$ 1-3 Billion) (ICMM 2012). The sites were one gold mine (referred to as site 1), two platinum mines (sites 2 and 4) and one diamond mine (site 3). The asset base of each participating site is not stated to protect the identity of the research sites.

At all four case study sites the following research respondents were purposively sampled; FTHSRs (n=2), WHSRs (n=4), production workers (n=6-8), a representative of the UHSS (n=1) and members of the employer OHS management system, including the chief safety officer, the occupational hygienist, the occupational medical practitioner and other site specific professionals identified as important which included the trainer of HSRs at two sites. This amounted to employer representatives (between n=4-7) being recruited into the study at each site.

The selection of HSR respondents both FTHSRs and WHSRs was made through the health and safety manager/chief safety officer. Criteria for the selection of respondents was shared with the safety department and is found in the appendices. In summary, the intention was to select WHSRs all of whom would be working underground and, of whom 50% had been in post for < 18 months and 50% of whom had been in post for >18 months. At each site the integrity of the case study was improved by insisting that all respondents were drawn from a clearly delineated section of a mine operation, for example ensuring all respondents worked on the same shaft. This meant that at each site respondents were familiar with the same types of OHS hazards, management regime and safety department which improved the triangulation of the data.

FTHSRs at all case study sites were relatively easy to access and to recruit into the study having an office on surface. It proved impossible to only select WHSRs who worked underground and/or who had been in their role for a set period of time. Primarily the difficulties centred around getting permission for a WHSR to be on surface when researchers were on site. The results chapter, Chapter 4 describes the characteristics of the WHSRs enrolled into my study. In total, the number of HSR respondents across all four sites were WHSRs (n=25) and FTHSRs (n=10).

As described in the next section, section 3.2.4, the study was designed around four repeat interviews with HSRs. This was not possible in all cases because changes occurred within the body of the enrolled respondents. During the course of the research one WHSR resigned; six WHSRs were retrenched; and one FTHSR died of natural causes. Thus, there was a significant adjustment in the respondent body during the period of data collection as new respondents were recruited. This degree of flux in the respondent body had not been foreseen in the study design. It also meant that there were different numbers of participating HSRs at the four sites as new respondents were recruited (Refer to **Table 4**).

The safety department also facilitated the recruitment of production workers across all four sites (n=37) and one or two representatives from the UHSS at each site. In total UHSS representatives (n=6) across all site were enrolled onto the study (Refer to **Table 4**). Production workers recruited for focus group discussions were found on surface attending training courses.

Purposive sampling of employer representatives of the OHS system successfully happened at all four case study sites. Respondents included the health and safety manager/chief safety officer, OHS medical practitioner, occupational health nurse, occupational hygienist, training

manager or HSR trainer, peer educator and social worker. In total, employer representatives (n=18) participated in the study (Refer to **Table 4**).

Table 4: Summary of the # of respondents at each case study site.

Respondent type	Site 1: Gold	Site 2: Platinum	Site 3: Diamond	Site 4: Platinum	Total # of respondents
# of FTHSR	2	2	3	3	10
# of WHSR	6	10	5	4	25
# of UHSS	2	1	2	1	6
# of employer representatives	6	3	4	5	18
# of production workers	8	8	11	10	37

3.2.4 Data collection

Data collection at the case study sites commenced in February 2015 and was completed in December 2016. Multiple data sources were used for each case study and replicated across all four study sites. Central to data collection at each case study were four repeat visits to each site designed to be undertaken quarterly over a 12 month period. Specifically the same purposively selected sample of HSRs were to be interviewed on a quarterly basis. In practice it proved more difficult to organise repeat visits to some of the case study sites and the field work took up to 18 months to complete at each site. Reasons for these delays are discussed in Chapters 4, 5, 6 and 8.

Data sources at each case study site included:

- Document review;
- In-depth face-to-face interviews with HSRs up to four times over an 18 month period (both FTHSRs and WHSRs);
- Monthly telephonic interviews with HSRs, and, after any significant OHS event[7];
- In-depth face-to-face interviews with employer representatives of the OHS management system;
- In-depth face-to-face interview with the UHSS;
- Non-participant observation at one mine health and safety committee meeting, and
- A focus group with production workers.

All of the data collection listed above was conducted at each site. The document review was conducted during the first site visit and a list of documents requested at each site is found in

[7] An example of this would have been an investigation, audit or RRDW in designated workplace

the appendices. In-depth interviews with HSRs and with employer OHS representatives were on-going over the 18 month period. An in-depth interview with the UHSS, a focus group with production workers and observation of the mine health and safety committee took place during the third or fourth visit to the site, once the site had become more comfortable with researchers.

While four data collection visits were planned per case study site, in reality it sometimes took up to seven visits per site to complete the date collection. Table **5** summarises the data collection at each case study site. In total, at each case study site the following interviews were completed; WHSR (n=57), FTHSR (n=25). Reasons for respondent attrition are described on page 64 and in Chapters 4, 5 and 6.

Table 5: Summary of data collection at four case study sites between February 2015 and December 2016.

Data collection	**Site 1: Gold**	**Site 2: Platinum**	**Site 3: Diamond**	**Site 4: Platinum**	**Totals**
Start date	Feb 2015	June 2015	March 2015	July 2015	
Finish date	Feb 2016	Dec 2016	April 2016	September 2016	
# of site visits to complete data collection	4	7	3	5	19
Signed Health & Safety Collective Agreement	1 1 draft H&S agreement unsigned	1	1	1	5
# of WHSR interviews	17	16	10	14	57
# of FTHSR interviews	8	7	3	7	25
# of UHSS interviews	2	1	1	1	5
# of employer interviews	5	3	4	5	17
# of focus groups with production workers	1	1	1	1	4
# of monthly telephone interviews	20	6	23	4	53
Non-participant observation of health & safety committee meeting	1	1	-	-	2

Background documentation was collected about the case study sites and the document checklist found in the appendices was used to guide this collection. However documents were only used to provide contextual information to aid the interpretation of the findings. No comparative list of available documentation at each site was prepared. In my research writing no specific details about the individual mines are drawn from these documents including site OHS performance, because mine participation was on the agreement of anonymity. Anonymised reference is made in Chapter 8 to the statutory Health and Safety Collective Agreement signed between the employer and recognised trade unions, which was made available to me at all four case study sites and is the only document referred to in my research writing.

Short monthly telephone interviews (n=53) were conducted with HSRs to build a relationship between researchers and respondents during the first two site visits. Researchers undertook to establish two-way communication with HSRs to encourage individuals to contact the research team through a cell phone message if and when they were involved with statutory measures, such as investigations, and the RRDW, thus maximizing the opportunity for real time reflection by HSRs and researchers. Telephone interviews did not prove as productive as planned, and neither did they elicit much new information. It was often difficult to establish a good cellular connection to mineworkers in rural areas and respondents were not readily available for interviews when working shifts. Six months into the data collection process the regular phone calls fell away.

In the third and fourth site visits, one focus group with production workers and an interview with the UHSS were conducted.

At sites 1 and 2 it was possible to observe one meeting of the mine health and safety committee at each site.

All interviews were conducted in English or the indigenous language of mineworker respondents including isiZulu, Sesotho and Setswana. Interviews were audio-recorded, translated and transcribed.

3.2.5 Tool development

The study required quarterly development of research tools to support the iterative process of case study research. Over the whole study the following research tools were developed to support he case study data collection and these are found in the appendices:

- Selection criteria for the inclusion of HSRs in the study;

- A short demographic survey for enrolled HSR respondents;
- A semi-structured interview protocol for WHSRs and FTHSRs per quarterly interview;
- A guide for document collection;
- A semi-structured interview protocol for employer representatives of the OHS system;
- A semi-structured interview guide for monthly telephone calls.

The quarterly in-depth interviews with HSRs focused on four specific areas: Quarter 1, the selection, preparation and HSR understanding of their role; Quarter 2, the day-to-day activities of HSRs with a focus on the day before the interview; Quarter 3, HSR role and understanding of issues related to health; and, Quarter 4 HSR engagement with organised labour. At each interview there was also an opportunity for respondents to share any specific developments related to their role as HSRs that had happened since the last research interview.

In-depth interviews with employer representatives explored their understanding of the selection, preparation and role of HSRs and their experiences of HSRs related to safety and health issues. Interviews with representatives from the UHSS focused on the selection and role of HSRs and their engagement with organised labour.

Observation at the mine health and safety committee was focused on the nature of the interactions between participants (who speaks, for how long, about what, with what response) and its outcome (what was decided). I conducted the non-participant observation and therefore used my in-depth understanding of the issues under investigation to frame my note taking during the meetings.

Site 1, acted as the *'pilot site'* for the research tools for each quarter. The research tools were discussed by the research team and modified as appropriate after each visit to site 1. In practice there were very minor changes made to the research tools after visits to the pilot mine. There was a minimal difference between the research tools used on site 1 and those used on sites 2, 3 and 4.

3.2.6 Preparation for the fieldwork

Given this study relied on replication of the research methodology at multiple case study sites, the careful preparation of the research team was critical for the evidence collected to have meaning. The preparation of the team was extensive and involved both myself and assistant qualitative researchers (3x) completing the same preparatory process. All fieldworkers, including myself had previously been involved in research activities on mines. Preparation for case study fieldwork included orientation to all of the following; the issues

under investigation, the research tools, the mining method and the common OHS hazards of the selected mine operations included in the study. Researchers examined the roles and responsibilities of HSRs as described in the MHSA and common procedures relevant to the work of representatives. In general, the preparatory process encouraged researchers to enter into the world of respondents.

As the lead researcher, I am a white woman who is English speaking. Two assistant qualitative fieldworkers/researchers were Black men able to work in several indigenous languages including isiZulu, Sesotho and Setswana. The first site visits included the involvement of a mining specialist (ex-Chief Inspector of Mines) in the research team, who assisted the team to understand the mining process and OHS hazards at each site. He also assisted with establishing positive relationships between the researchers and the mine sites because he had a long-established career in the sector. This was important given the research team required access to each mine site for repeat visits.

As the lead researcher I conducted the document review, in-depth interviews with HSRs, the UHSS and employer OHS representatives, as well as, non-participant observation at the mine health and safety committee meeting. Two male Black assistant qualitative researchers conducted in the indigenous languages listed above the focus group discussions with production workers, HSR in-depth interviews and monthly telephone calls.

3.3 Analysis

Establishing the trustworthiness and credibility of the data was important. Once data collection had commenced the research team convened after each day of data collection to share experiences, to triangulate different sources of evidence and assign meaning. The research team considered the collection of data given the racial and gender diversity of the team and whether any differences had emerged in the narrative of respondents perhaps because of this. However we did not identify any major concerns.

Transcribed interviews were reviewed by the research team prior to analysis. The research assistants read the transcripts of the translated of interviews (from an indigenous language to English) to ensure the interview had been captured reliably. A second technical review ensured that the interviewers and the transcribers had understood technical mining terms and processes correctly. Small corrections were made as necessary. MaxQDA version 18 acted as a case study *'database'* to store the evidence collected at each site (Yin, 2014). All types of data were included; transcripts of in-depth interviews, notes taken after site visits, observation notes from the health and safety committee meetings and documentation from

mine sites. All data was read carefully. A code book was developed for the data including both inductive and deductive codes (Bazeley and Jackson, 2013), although the emphasis was placed on was allowing the data to determine codes (Charmaz, 2006). The codes were discussed with two other experienced qualitative researchers. An inter-coder agreement was established with a portion of the data to check qualitative analysis too.

Although at the outset it had been my intention to prepare four individual descriptive case studies the narrative about HSR experience was repeated across mine sites to such an extent that descriptions of each site no longer held value. Instead I *'played'* with my data applying a series of exercises that involved standing back from the detail and asking myself what really stood out, and by creating diagrams that linked the findings and data sources (Yin, 2014). My approach being informed by grounded theory, where the data leads the process of analysis (Charmaz, 2006). I thus entered into a process of iterative cross-case synthesis with the purpose of using my data to be both exploratory and explanatory. My units of cross-case synthesis were built bottom-up; firstly, the experiences of WHSRs; secondly, the experiences of FTHSRs, the UHSS and employer representatives in the management of safety; and thirdly, the experiences of FTHSRs, the UHSS and employer representatives in the response to health. These three units of cross-synthesis created the analysis that is found in the results Chapters 4, 5 and 6 respectively. In each of the results chapters the process of meaning making examined the findings against the theoretical backdrop of production politics. *"Case studies being generalizable to theoretical propositions, and not to populations or universes."* (Yin, 2014: 21). In my presentation of the findings I drew on two additional theoretical frameworks that emerged inductively and complemented my production politics framework. Chapter 4, drew on conceptions of *"responsibilisation,"* (Gray, 2009) and Chapter 5, explored the application of systems thinking through *"socio-autopoiesis"* (Luhmann, 1995).

The document review did not feature strongly in the analysis presented in the results chapters 4, 5 and 6. The use of OHS performance data at each site was not included in the write up of case studies either because this could have revealed the identity of participating sites. However, in Chapter 8 (Discussion), I specifically reference the mine health and safety collective agreements signed on each site.

Preliminary findings were shared with mining stakeholders including organised labour at three research forums; Mine Safe 2016, at a workshop hosted on 7 March 2017 by the University of the Witwatersrand and at Mine Safe 2019 (Refer to Thesis Material on page v).

These early presentations were well received and ensuing questions and feedback helped strengthen the arguments that have subsequently been developed in this thesis.

3.4 Ethics

The study was approved by the Human Research Ethics Committee (HREC-Medical) University of Witwatersrand, Clearance Certificate No. M140701 prior to commencing research activities. Mineworkers are not a vulnerable research population per se, but HSRs can be exposed to traumatic circumstances. Access to counselling for either respondents or researchers was arranged through either a company OHS service and/or at the University of the Witwatersrand. Participation in the study was voluntary and based on anonymity in research writing. All research respondents were provided with detailed information about the study and opportunity was provided for questions prior to providing written consent. Consent was provided separately for audio recording. The consent forms cannot be linked to the individual answers to questions because each respondent who participated in the study was assigned a unique code. Data was stored in the case study database using unique codes only.

All information gathered has been kept strictly confidential and is stored on a password protected computer. Access to this information was limited to myself as the lead researcher and academic supervisors (Professors Nicola Christofides and Edward Webster), the research assistants during the data collection process, and the translator and/or transcriber. All research assistants including the transcriber were required to sign a confidentiality agreement. Information shared at the mine health and safety committee meetings that was considered outside the scope of this study did not form any part of the study.

The secondary data analysis of quantitative and qualitative data from the mixed methods study of the RRDW involved depersonalised data only.

Chapter 4

4 Paper 1: The role of workplace health and safety representatives and the creeping responsibilisation of occupational health and safety on South African mines

4.1 Abstract

ILO Convention 176 provides for worker selected health and safety representatives (HSRs) with which the South African Mine Health and Safety Act (MHSA) No 29 of 1996 as amended complies. Although arrangements for worker consultation is well established in other industrialised contexts worldwide, it is threatened by neoliberalism and a trend within occupational health and safety (OHS) regulation described as *'responsibilisation.'* This paper examines the experience of South African HSRs in relation to this globalised context. In-depth, semi-structured interviews (n=37) and short telephone interviews (n=53) were conducted at four large underground mines (platinum, gold and diamond) with workplace HSR (n=25) between February 2015 and June 2016. Interviews explored HSR perceptions of their preparation, day-to-day activities, context and experience of OHS transgressions. Interviews were translated, transcribed and thematically analysed (Max QDA 12). A four domain framework was developed to encapsulate the experience of HSRs, that left them feeling accountable, or having to account, for the OHS transgressions of co-workers, and in some instances, facing employer action against themselves. The term *'creeping responsibilisation'* was introduced to describe the slide towards HSRs holding responsibility for OHS transgressions in place of the employer. The pre-conditions for autonomous worker representation in South Africa are judged to be insufficient which holds lessons for other African states wishing to strengthen their own commitments to OHS.

Key words: occupational health and safety, worker representation, regulation

4.2 Introduction

The African Union (AU), Mining Vision (2009) charts the way forward for mining on the continent, as a road towards economic development and industrialisation, albeit not at the expense of a *"sustainable and well governed"* sector, that is amongst other criteria *"safe"* and *"healthy."* Over the last decade, the rush for economic growth on the African continent, where the pressure for job creation and poverty alleviation is palpable, can deflect attention away from the goal of a safe and health workplace. Occupational health and safety (OHS) has a poor base in Africa, especially if the workplace is hazardous. In many instances, OHS legislation is incomplete or outdated, there is a lack of enforcement by labour inspectorates,

and reported data on accidents and occupational disease is low (Alli, 2008). As a consequence, strengthening a complementary vision for the effective delivery of OHS in African mining is crucial to meeting the aspirations of the AU.

The post 2015 Millennium Development Goals' context has propelled the ILO Decent Work Agenda centre stage through its endorsement in new Sustainable Development Goal (SDG) #8 (ILO, 2015). This Goal sets out to right the inequalities of globalisation and recognises the centrality of workplace OHS to do this. The ILO has a series of conventions, recommendations and codes of practice in support of this, of which the most important convention in mine OHS, is the Safety and Health in Mines Convention 176, 1995 (ILO, 1995). Embedded in C176 are tripartism for sound governance, and the protection of worker rights, including the freedom of association and the right to collective bargaining, and OHS rights such as the right to refuse dangerous work. C176 acknowledges the rights of workers to, *"genuine consultation on and participation in the preparation and implementation of safety and health measures,"* (Preamble) and Article 13 thereof, provides workers with the right to collectively select health and safety representatives (HSRs). However ratification of C176 is limited in Africa (six countries only; South Africa, Botswana, Zambia, Zimbabwe, Morocco and most recently Guinea) and thus not only is mine OHS regulation immature on the continent, correspondingly the practice of worker selected HSRs on African mines is fledgling. This paper is an early contribution to building empirical evidence in support of the workplace HSR (referred to in this paper as HSR) in Africa. It explores the perceptions of HSRs (n=25) of their preparation and role, on four South African mines. It then examines the context within which HSRs function and the manner in which they are exposed to OHS transgressions and the consequence and penalties thereafter. This is mapped against a framework to understand the trend within OHS regulatory arrangements towards *'responsibilisation'* (Gray, 2009; Walters and Wadsworth, 2017).

4.3 Global OHS regulation and HSRs

The South African Mine Health and Safety Act (MHSA) No 29 of 1996 as amended (Republic of South Africa, 1996) is framed by self-regulation, fashioned in the UK in the early 1970s (Robens, 1972) and is compliant with the provisions of C176. The arrangements under the Act for worker participation in OHS, including the appointment of worker elected HSRs, and a joint employer/employee mine OHS committee, are found in other mining and industrialised contexts including Australia, Canada, New Zealand, the UK and Europe. These participatory arrangements are well established elsewhere, and it is widely accepted that HSRs contribute positively to OHS outcomes (Walters and Nichols, 2007; Walters, Quinlan, et

al., 2016b; Nichols et al., 2007). However the specific form this participation takes varies across different contexts. ILO C176 states that worker representatives should represent workers on all aspects of OHS, participate in inspections and investigations, have recourse to advisors and independent experts, consult with the employer on policy and procedure, consult with the regulator and receive notices of accidents and dangerous occurrences. All of which, is to be exercised without discrimination or retaliation (ILO, 1995). Worldwide on a day-to-day level, workplace HSRs activities are predominantly found to be operational rather than strategic (Garcia et al., 2007; Harris et al., 2012; Menéndez et al., 2008; Gaines and Biggins, 1992). Accordingly, HSRs rarely participate in the setting of OHS standards and procedures. An early South African study (Mine Health and Safety Council, 2007) concerned with the elimination of silicosis on gold mines found HSRs almost universally unappreciated their advocacy or pro-active role, despite being able to make *"recommendations"* to the employer (Section 30) under the MHSA. The operational activities of HSRs in an industrial workplace are well described in a New Zealand study by Harris et al (Harris et al., 2012) who adapted a framework, first used to describe the activities of OHS practitioners (Brun and Loiselle, 2002) to categorise these into three types; operational organisational, operational technical and operational human. Operational activities of HSRs in this instance (Refer to Table **6**) included providing information and advice to workers, the administration of OHS procedure, monitoring of the workplace, improving the attitude of workers to OHS and finding workplace solutions to control measures and production targets.

Table 6: The activity profile of HSRs at an operational level using an adapted framework first devised for OHS practitioners.

Operational level (Brun and Loiselle, 2002)	**Organisational** Ensure OHS procedure & policy applied Investigate accidents	**Technical** Research ways of resolving OHS issues Conduct risk analyses	**Human** Train workers in safe work methods. Discuss OHS issues with workers
Activity Profile HSR New Zealand (Harris et al, 2012)	Administration of procedure- completion of paper work and reporting to support implementation of the OHS management system	Monitoring the workplace Support/provide solutions to control measures and production targets	Information and advice to workers Improving the attitude of workers Monitoring worker compliance

Evidence built over decades of research about worker representation is that there are a set of pre-conditions necessary for effective worker representation and consultation in OHS that involve all the tripartite role-players (employer, regulator and organised labour) and that HSRs should be well trained(Walters and Nichols, 2007). These pre-conditions manifest

more, or less strongly, in different contexts, but combinations of these pre-conditions, are found to be necessary to underpin HSRs making a significant contribution to improved arrangements and performance for OHS. The pre-conditions are;

- *"A legislative steer*
- *Demonstrable senior management commitment to OHS and a participative approach and sufficient capacity to adopt and support participative OHS management*
- *Competent management of hazard/risk evaluation and control by both managers and representatives*
- *Autonomous worker representation at the workplace and external trade union support leading to informed and well-trained workers representatives*
- *Consultation and communication between worker representatives and their constituencies."* (Walters and Nichols, 2007: 117)

Although at the time, Robens (1972) in his fashioning of self-regulation, argued there was a *"natural identity of interest"* between the employer and the employee with respect to OHS, this is repeatedly called into question. Primarily this is because OHS is a product of the underlying politics of production, specifically the pressure for production, to which the employer and employee cannot respond equally (Nichols and Armstrong, 1973). As a consequence, participatory arrangements between the employer and employee for OHS remain contentious. One OHS trend that has emerged under the more recent neoliberal discourse of partnership between the employer and employees is framed as *'responsibilisation'* (Gray, 2009; Walters and Wadsworth, 2017). Under '*responsibilisation*,' workers are considered as both potential victims, and as offenders of OHS violations. Although, *'responsibilisation'* speaks to an escalation in the likelihood of individual workers being held responsible for OHS violations. In Ontario, Canada, '*responsibilisation'* found legal expression in a system of OHS ticketing where on-site penalties issued by inspectors for OHS violations were found to be unduly biased towards workers, rather than the employer as the primary OHS offender (Gray, 2009). However '*responsibilisation'* is a continuum which does not only have to find expression in legal tickets. Increased disciplinary action against individual workers, or escalating fear amongst workers of being held accountable for OHS violations or transgressions, are also expressions of a rise in '*responsibilisation*' which serve to deflect responsibility for OHS violations away from the employer. It is this context I term *'creeping responsibilisation,'* as it is not measured in the hard penalties issued against workers described in the Ontario case study of '*responsibilisation'*, but is an insidious expression of this.

4.4 HSRs in South Africa

South Africa is a complex environment, formally considered an upper middle income country, but burdened with one of the highest Gini co-efficients in the world (Anand et al., 2016). It is also home to the world's deepest mines and the majority of mineworkers work underground in gold or platinum mines in production teams of between 6-12 workers. Despite the gold sector being faced with continued decline over the last 20 years, there are still 455,109 mineworkers employed in the sector (Chamber of Mines of South Africa, 2017a). As in other mining contexts worldwide, contract labour has become more common place (Forrest, 2015). There have been hard won improvements in the remuneration of mineworkers, but production targets remain partially incentivised through bonus payments, including in some cases, bonus payments for safety performance (Chinguno, 2015). These payments remain important and most mineworkers live and come from very poor communities (Chaskalson, 2016).

Representative arrangements for worker participation under the MHSA require that every mine with 20 or more employees must have an HSR elected by workers (Section 29 (1) for each shift at each designated working place at the mine (Section 25(1)). No HSR is responsible for more than 100 employees or 50 employees if the designated working place includes separate working places (Section 27(2)). The only qualifications placed on the workplace HSR is that he/she be employed in a full-time capacity in the designated working place and is acquainted with the conditions and activities (Section 28). The number of representatives and the designation of workplaces are agreed in the mine health and safety collective agreement signed with recognised trade unions. A workplace HSR is not relieved from the duties associated with his or her full time job. Because of this, and for other reasons, such as absenteeism, an alternative HSR is most often elected at each designated worksite too. On a large mine with thousands of employees, effectively hundreds of workplace HSRs and their alternatives are appointed at any one time. Section 26 of the Act also makes provision for the appointment of a full-time HSR subject to an election. A full-time HSR relinquishes his or her original post for the period of appointment as a full-time HSR. Full-time HSRs may exercise their powers and functions in all parts of the mine for which they are appointed. On large platinum and gold mines between 2 and 4 full-time HSRs may be appointed per shaft. Although the full-time HSR is not the focus of this paper, they are introduced here because they are referenced by workplace HSRs in the findings.

All representatives are entitled to training without loss of pay (Section 30(6)). In South Africa, the Mining Qualifications Authority (MQA) accredits training for HSRs on mines. There

are three accredited courses each requiring 5 days face-to-face training, which should be undertaken by an HSR on appointment (Mining Qualifications Authority, 2015). Only one of the courses addresses the functions of the HSR. The other two courses are focused on hazard identification and an introduction to OHS. An early initiative of the MQA to provide training collapsed in 2010, and today the employer delivers HSR training, either through the on-site mine training department, or through an appointed external training provider. In either case, both will be accredited as training providers by the MQA.

Since the promulgation of the MHSA, OHS performance in the mining sector has appeared to improve dramatically. One explanation offered by Hermanus (Hermanus et al., 2019) for this is that the reduction in fatalities, silicosis and NIHL can all be matched to the dramatic decline in employee numbers in South Africa's gold industry. The Chamber of Mines South Africa (COMSA) and the Department of Mineral Resources (DMR) Mine Health and Safety Inspectorate (MHSI) however, do not make this association between the fall in employee numbers and improved OHS performance. They propose that tightened regulation and improved OHS standards are the reasons behind an 87% reduction in fatalities over the period 1993 to 2015, with 73 fatalities recorded in 2016 (Phakathi, 2016). Presently the formal South African mining sector performs on a par with other benchmark mining nations, such as Canada and the USA. Gold is still the commodity responsible for the greatest number of deaths. The major causes of fatalities are falls of ground and accidents related to transportation (Chamber of Mines South Africa, 2017b). Although the sector has struggled to report reliably on occupational disease, the most recent reports indicate improvements in relation to silicosis and NIHL (Department of Mineral Resources, 2017). In the last 20 years, the mining sector has carried an extremely high burden of communicable disease, specifically HIV and TB. A recent review of secondary epidemiological data found that both TB and HIV are higher in mining areas than in the general population (PHRU, 2017). Other studies in South Africa have found that mineworkers carry a heavy burden of non-communicable disease and psycho-social stress (Balfour-Kaipa, 2016). Many mineworkers are stressed about money and are heavily indebted (James and Rajak, 2014).

Table 7: MHSA No 29 of 1996 as amended, Section 30 Rights and powers of workplace HSR and Section 23 the Right to Leave a Dangerous Workplace (Republic of South Africa, 1996).

Section of the MHSA	Description
Chapter 3:	
Section 30	Rights and powers of representatives: • Represent employees on all aspects of health and safety • Direct any employee to leave any working place if circumstances arise at the working place • Identify potential hazards and risks to health and safety • Make representation or recommendation to the employer or to a health and safety committee on any matter affecting the health and safety of employees • Inspect any relevant document which must be kept in terms of the MHSA • Request relevant information from an inspector • With the approval of the employer, be assisted by or consult an adviser or technical expert • Attend any meeting of a health and safety committee • Request an inspector to conduct an investigation • Participate in consultations on health and safety with the employer or an inspector • Participate in any health and safety inspection and in any internal health and safety audit • Inspect working places with regard to health and safety • Investigate complaints by any employee relating to health and safety • Examine the causes of accidents in collabouration with the employer • Visit the site of an accident • Co-operate with the employer in the conducting of investigations and participate in inquiries • Perform functions agreed by the health and safety committee; or prescribed. NB. The rights and powers apply to health and safety representatives only in respect of the working places for which they are responsible
Section 30(6)	Health and safety representatives are entitled to perform their functions and to receive training during ordinary working hours
Section 30(7)	Any time reasonably spent by a health and safety representative for a purpose in (6) must be considered for all purposes to be time spent carrying out the employment duties of that representative
Section 23	The employee has the right to leave any working place whenever - (a) circumstances arise at that working place which, with reasonable justification, appear to that employee to pose a serious danger to the health or safety of that employee; or (b) the health and safety representative responsible for that working place directs that employee to leave that working place.

There are three sections under the MHSA that have a bearing on the participation of workers and their representatives in OHS; Sections 22, 23 and 30. Section 22 describes the individual responsibility of a worker to act responsibly to protect his or her OHS, and to abstain from wilfully endangering the OHS of others. HSRs do not have a specific role or function in relation to Section 22, other than that bestowed on them by virtue of being an employee (including a contract worker in this instance). Section 22 requires every worker (including HSRs) *"to take reasonable care to protect their own health and safety"* and that of any other persons who *"may be affected by any act or omission of that employee."* It also

requires that employees take "*proper care"* of protective clothing and any other safety facilities and equipment, "*comply with prescribed health and safety measures"* and procedure and in the event of any situation that presents a risk to his or her OHS or any other person, with which he or she is unable to properly deal, then report promptly to the immediate supervisor. Sections 23 and 30 are directly relevant to HSRs (Refer to Table **7**). Section 23 (a) grants the individual mineworker the right to leave a dangerous workplace (RLDW), but Section 23 (b) instructs an HSR to direct an employee/s to leave a workplace which appears to the HSR to pose a serious danger to OHS. Section 30 determines the role and functions of the HSR. The overall thrust is firstly, *'representation'* and/or *'recommendation'* to the employer on any matter related to OHS that is affecting employees and secondly, to contribute to the identification of potential hazards and risks to OHS, and to support the inspection of the workplace. Thirdly, to investigate co-worker complaints regarding OHS.

Section 22 with its focus on the individual responsibilities of workers at first glance speaks to '*responsibilisation'* cautioning individual workers as both potential victims and offenders of OHS violations. Given their direct exposure to potentially unsafe conditions, individual responsibility for risk falls heavily on workers, and under Section 22 workers are impressed to take "*reasonable care"* to protect their own OHS and that of other persons. Thus the onus is on individual workers to act within a framework of individual employee rights and responsibilities, described by Gray in his paper elaborating *'responsibilisation'* as a *'rights defined identity'* (Gray, 2009). Primarily this requires individual workers to ask questions, raise or report concerns to supervisors and exercise OHS rights, such as the RLDW. In doing this, it is assumed an individual worker can affect change by speaking up and/or removing him or herself from a dangerous workplace. Thus a worker can in theory exercise control over his/her OHS, which is in marked contrast to the *'victim-blaming'* that was commonplace prior to the introduction of the MHSA. During South Africa's racialized and discriminatory past, the black mineworker majority were commonly blamed for accidents in the absence of remedial mechanisms for either individual or collective action by workers (Stewart and Nite, 2017).

However acting within a '*rights defined identity'* is shaped by the individual rights discourse rather than the collective right to worker representation associated with the OHS role of organised labour. The rise of individual employee rights and employment protection, and the demise of collectivism and union solidarity as the anchor for labour justice related to

OHS is well documented by Hilgert in his critique of global norms with respect to the right to refuse dangerous work and/or RLDW (Hilgert, 2013). Existing evidence is that South African mineworkers have limited success to act within a *'rights defined identity'* and that the collective voice of worker elected HSRs is repressed. Coulson et al. (2019) found that resistance to an unsafe workplace was often expressed informally, rather than formally. Workers stated that although they were likely to approach an HSR in the event of exercising the RLDW, HSRs were unable to escalate issues beyond the immediate workplace. As a consequence workers resorted to informal resistance to an unsafe workplace, involving confrontation with supervisors and/or other production team members that would resolve either through the coercion and/or capitulation of workers back into the workplace.

This paper explores the perceptions of HSRs (n=25) at four mine sites in South Africa about their preparation and understanding of their role and their day to day activities. It sets out to provide evidence of '*a creeping responsibilisation'* on South African mines that results in worker elected HSRs feeling anxious about their accountability for OHS transgressions and in some instances, facing employer actions against them. Both of which serve to deflect responsibility for transgressions away from the employer.

4.5 Materials and methods

A qualitative study was conducted at four mine sites between February 2015 and February 2016 to explore the preparation and practice of workplace HSRs. The mine sites (classified using the profile developed by the International Council on Mining and Metals (ICMM) (ICMM, 2012) included two global senior mining companies asset base US$ 3 Billion and above and two intermediate mining companies asset base US$ 1-3 Billion) were underground operations with > 500 employees workers on site including gold (1 mine), platinum (2 mines) and diamond (1 mine). Table **8** summarises the data collection. Workplace HSR were purposively sampled. With the exception of one site HSRs were selected with both ≤18 months experience in the role and ≥18 months experience in the role. The safety department at each site facilitated access to HSRs. On the first visit HSRs (n=4) and in one case HSRs (n=5) were recruited for the study at each site. After the first visit HSRs (n=4) recruited for the study had been retrenched and HSR (n=1) had resigned from the role necessitating the recruitment of another HSRs (n=8). In total, workplace HSRs (n=25 (gold (n=6), platinum (n=14) and diamond (n=5)) participated in the study of whom (n=12) were interviewed twice mostly within a 4 month period. Other HSR were not available on the day of the second research visit, or had been retrenched, or resigned from the role. Thus in-depth semi-structured interviews (n=37) were conducted in total. Of the total sample,

HSRs (64%) worked underground and HSRs (60%) reported ≥18 months experience in the role, although this experience was not necessarily limited to the research site only. HSR who worked on surface included those working in workshops, training facilities and administration blocks.

The in-depth semi-structured interviews (n=37) of 60 minutes or more in length explored HSRs perceptions of their:

- Preparation for the role
- Understanding of the role in relation to the statute
- Day-to-day activities with a specific exploration of the day before the interview and,
- Challenges commonplace in the execution of their daily activities.

Short monthly telephone interviews (n=53) with HSRs were used by researchers to build a relationship with HSRs and to check for any significant developments, especially at the first two sites where interviews were conducted. All in-depth interviews were conducted in English and in local indigenous languages by a trained qualitative researcher. Interviews were translated and transcribed. Ethics clearance was provided by the Human Research Ethics Committee (HREC)-Medical, University of Witwatersrand, Clearance Certificate No. M140701. Participation in the study was voluntary and with informed consent. Transcribed data was thematically analysed using Max QDA 12 using deductive and inductive codes. Two experienced qualitative researchers met to determine inter-rated reliability and to check for consensus and consistency.

The study sites included global senior and intermediate mine operations with > 500 employees on site. Therefore the findings may not resonate with small scale or junior producers where the role of HSRs may take an alternative form.

Table 8: Data collection at 4 mine sites with respect to HSR.

Site	Site 1 Gold	Site 2 Platinum	Site 3 Diamond	Site 4 Platinum	Totals
Start date	Feb-15	Jun-15	Mar-15	Jul-15	
End date	Oct-15	Feb-16	July-15	Oct-15	
# HSRs recruited at first visit	4	4	5	4	17
# HSRs recruited at subsequent site visits	2	6	0	0	8
# HSRs recruited in total	**6**	**10**	**5**	**4**	**25**
# HSRs resigned	1	0	0	0	1
# HSRs retrenched	0	6	0	0	6
# HSRs became FT HSRs	0	0	0	1	1
# HSRs whose situation changed during research	**1**	**6**	**0**	**1**	**8**
# HSRs reps underground	6	5	3	2	16
# HSRs reps surface	0	5	2	2	9
# HSRs ≥ 18 months experience not only restricted to study site	2	6	3	4	15
# HSRs with ≤ 18 months experience	4	4	2	0	10
# HSRs interviewed 1x	3	8	0	2	13
# HSRs interviewed 2x	3	2	5	2	12
Total # interviews with HSRs	**9**	**12**	**10**	**6**	**37**
# phone calls to HSRs between March-December 2015	20	6	23	4	53

4.6 Results

In interviews with HSRs it was apparent that HSRs expressed an astonishing degree of personal responsibility or accountability for OHS incidents. These were not incidents committed by themselves, they were incidents committed by the co-workers they represented. This was coupled with the sense that the employer *'seeks out'* or *'comes for'* the HSR in the event of an OHS incident. In more extreme cases, the HSRs described employer action been taken against them, either by being moved out of the immediate workplace and, as in one case, being suspended from work. These findings spoke to *'creeping responsibilisation.'* Either because HSRs were taking on the role of the guilty partner in the event of wrong doing, by feeling personally responsible for the OHS error of other workers, or by being the foil for the employer against a backdrop of OHS transgressions. The sum total of which meant that employer responsibility was deflected. This was the insidious *'creeping responsibilisation'* rather than *'responsibilisation'* because there were no consistent hard measures taken against HSR, just pervasive descriptions by

HSRs of their own experience of holding responsibility and facing penalties against a backdrop of OHS transgressions.

My analysis of the findings led me to develop a framework (Refer to Figure **5**) to reflect on the commentary of HSRs with respect to *'creeping responsibilisation.'* The four domain framework aimed to weave together the evidence given by HSRs as to how *'responsibilisation'* emerged. The first domain considered the preparation of HSRs and their referencing of the law and specifically the MHSA; the second, their day-to-day activities and whether these aligned with the activities of HSRs elsewhere in the world; the third, how the context within which HSRs functioned left them exposed to OHS transgressions that they were unable to address or take action against; and the fourth, the expression of *'creeping responsibilisation'* through the consequence and penalties faced by HSRs, both at a personal level and in employer actions taken against them. The findings are organised under the heading of each domain of the framework. The perceptions of HSRS are illustrated by quotations taken from the qualitative data.

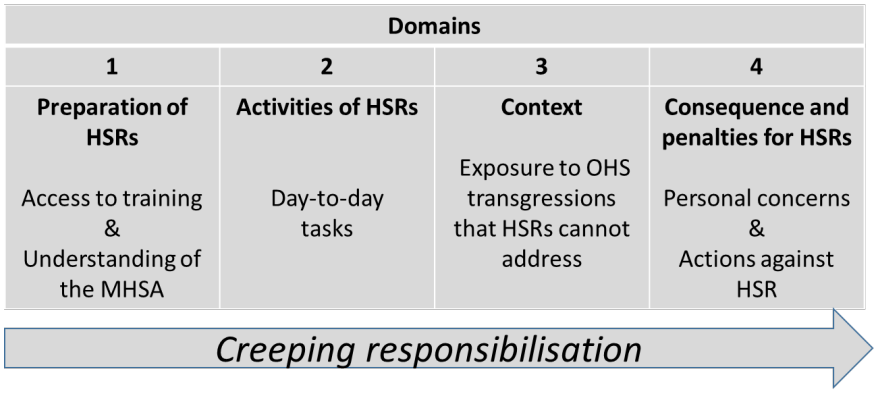


Figure 5: A four domain framework for understanding HSR experience of *creeping responsibilisation.*

4.6.1 Domain 1: The preparation of HSRs

All HSR reported being selected by co-workers. Table **9** summarises the demographic background of HSRs (n=25). The majority were male (92%), above 30 years of age (78%), with more than 3 years of experience (56%) of their present job. Most had been to high school (88%) and reported having completed grade 12 or above (56%). The considerable length of time in their present job and that almost all HSRs had been to high school suggested that the sample were very likely to be *"familiar with the hazards and procedures of the mine workplace,"* (Section 28) which is the only requirement placed on the appointment of a HSR under the MHSA. Thus the sample was compliant with the Act. Trade

union membership was (84%) and almost all HSRs (92%) reported representing less than 50 workers. Of the sample (64%) were serving their first term as an HSR.

Table 9: Demographic and other background information about HSRs.

Variable	Category	#	%
Selected by co-workers		25	100
Age in years	21-30	6	24
	31-40	11	44
	41-50	7	28
	51+	1	4
Sex	Male	23	92
	Female	2	8
Home language	isiZulu	1	4
	Setswana	7	28
	isiXhosa	3	12
	TshiVenda	4	16
	Sesotho	6	24
	Sesotho sa Leboa	1	4
	SiSwati	1	4
	Afrikaans	1	4
	English	1	4
Years holding present job	< 1	4	16
	1-2	6	24
	3-5	10	40
	6-10	4	16
	Unknown	1	4
Schooling	Completed primary school	2	8
	Some high school	8	32
	Completed matric	7	28
	Tertiary education	7	28
	Unknown	1	4
Terms served as a workplace HSR	One	16	64
	Two	5	20
	Three or more	2	8
Membership of a trade union	Yes	21	84
	No	4	16
# Workers representing in the workplace	<50	23	92
	50-100	2	8

The findings showed that HSRs relied heavily on training to understand their role but the experience of this was not uniform. There was evidence that some HSRs had attended some/all of the sector-wide, accredited 15 day representative skills programme (Mining Qualifications Authority, 2015). Other HSRs reported having attended no training, or training for three days only. Representatives stated they were trained at the mine training department, or by an external service provider working on contract for the employer. Only one HSR reported the involvement of organised labour in training that had happened ten years ago. Training was in some instances complemented by other on the job activities, such

as watching other HSRs perform their duties, and informal mentoring provided by the full-time HSRs, or from supervisors and safety officers. HSRs reported that attending meetings also provided some guidance about their role. Despite the gaps and inconsistencies in their preparation, HSRs referenced their role back to the MHSA, but did not reference section 30 (the rights and powers of HSR). Rather HSRs referenced sections 22 (individual worker OHS responsibility) and 23 (RLDW).

"They trained me about how to do risk assessment and they trained us about section 23, if the place is dangerous I have the right to refuse. And other thing is section 22, they trained us at work we need to take care of each other." (HSR underground platinum mineworker age 43)

"Sometimes you find out that the crew want to blast but in a sub-standard way whereas as a health and safety rep I have to apply section 22 and 23 which is the Mine Health and Safety Act." (HSR underground platinum mineworker age 35)

4.6.2 Domain 2: Activities of HSRs

Across all four sites, HSRs described four areas of operational level activity. As found elsewhere, workplace HSR did not describe influencing OHS policy and standards or making effective representation upwards to the mine OHS committee, and therefore their activities were categorized as operational and categorised as follows:

i. Risk assessment for safe production: Completing risk assessments (often mini risk assessments) such as *'early examination making safe'* to support safe production;
ii. Administration and reporting: The completion of forms (such as signing off on early examination making safe) incident reports and stop notes that are relayed either to supervisors and/or production management, the safety department, and/or to the full-time HSR and, the attendance of shaft or shift OHS meetings;
iii. Worker education, communication and compliance: Conducting worker education, and/or communicating with workers about OHS to ensure compliance with procedure, and with the wearing of PPE;
iv. Support to worker health and wellbeing: Such as seeing to workers who are sick at work and/or listening and advising on the personal or emotional problems of workers.

These activities map well against the framework used by Harris et al (Harris et al., 2012) to categorise the activities of HSRs in New Zealand (refer to Table **6**). The exception to this is

the support to worker health and wellbeing which was not described in the New Zealand study, but is captured on Table **10** as a second grouping under the category *'operational human.'* The introduction of the MHSA and worker elected HSRs coincided with the rapid escalation of the HIV epidemic in South Africa. In the late 1990s, the mining sector was considered the epicentre of the HIV epidemic, and treatment was not yet available (Campbell and Williams, 1999). Given this, it is fair to assume, that worker elected HSRs would have faced significant levels of ill health in the workplace amongst co-workers, and themselves, providing the context for their support role to worker health and wellness. HSRs described how depending on their specific workplace (for example, underground stope or conveyor belt maintenance, or on surface workshop), and/or their educational background, and/or personal attributes, different activities got emphasized, suggesting that there is variation in the exact role taken by individual HSRs. For example, HSRs reported being technically experienced, and able to identify workplace hazards, or literate, and able to assist supervisors with paper work and/or being effective in their communication. In general, HSRs placed emphasis on their education and communication activities.

"My role is to inform my fellow workers, of their right to health and safety and to advise them on what to do in risky situations, the decision still lies to them to do what they want to do, and it is my job to educate them." (HSR surface diamond mineworker age 26)

Table 10: The activity profile of HSR at an operational level in New Zealand and South Africa.

Operational (Brun and Loiselle)(Brun and Loiselle, 2002)	**Organisational** Ensure OHS procedure & policy applied Investigate accidents	**Technical** Research ways of resolving OHS issues Conduct risk analyses	**Human** Train workers in safe work methods. Discuss OHS issues with workers	
Activity Profile HSR (Harris et al New Zealand)(Harris et al., 2012)	Administration of procedure-completion of paper work and reporting to support implementation of the OHS management system	Monitoring the workplace Support/provide solutions to control measures and production targets	Information and advice to workers Improving the attitude of workers Monitoring worker compliance	
Activity Profile HSR (this study)	The completion of forms (such as the sign off early examination making safe) incident reports and stop notes that are relayed either to supervisors and/or production management, the safety department, and/or to full-time HSR and, the attendance shaft or shift OHS meetings	Completing risk assessments (often mini risk assessments) such as 'early examination making safe' to support safe production	Conducting worker education, and/or communicating with workers about OHS to ensure compliance with procedure, and with the wearing of PPE	Support to worker health and wellbeing, such as seeing to workers who are sick at work and/or listening and advising on the personal or emotional problems of workers

4.6.3 Domain 3: The context of HSR activity and exposure to OHS transgressions

The context for HSR activity was complex. This was because HSRs were regularly exposed to OHS transgressions and described being unable to change this. The primary narrative of HSRs was being caught in the nexus between production pressure and working safely, and the consequences thereof, which then left them vulnerable and unwittingly complicit in OHS transgressions. Secondly, HSRs described aspects of their role that in some instances, meant they too committed OHS transgressions. And thirdly, in reference to the two earlier points, HSRs described having OHS knowledge and experience but, being unable to act with reference to this, to bring about change in their context.

4.6.3.1 Production pressure and OHS transgressions

HSRs described employer transgressions and informal worker short cuts that compromised the integrity of the HSR role, as supervisors and/or co-workers chased production targets. In

South Africa, the pervasiveness of production pressure and the localised expression of informal working especially on gold mines to avoid production blockages by working outside mine standards, is known as *'planisa'* (to make a plan or improvise) and is well documented (Phakathi, 2012). Whereby worker teams improvise to overcome a number of systemic and commonplace production blockages to meet targets in pursuit of bonus payments often with the support of supervisors, who themselves are under pressure.

HSRs described the pressure to meet production targets taking many forms, including the reorganization of the production team across day and night shifts to maximize outputs that resulted in individuals being pushed to perform *"miracles" (HSR underground gold mineworker age 45)* and the flouting of safety standards, such as those for workplace support. HSRs also described incidents where workers were unqualified to perform certain tasks. Mostly HSRs described supervisor pressure to do the wrong thing, but it was also co-workers who took short cuts. In both instances HSRs described these as the *"difficulties"* they faced.

"The supervisor forced us to load without a proper cage. As a safety rep I have to tell him no we can't load it without a cage, as it is the law. The supervisor forced us to load them without a cage. So, those are the difficulties I have experienced." (HSR surface platinum mineworker age 32)

"Sometimes when there's no [support] material the people that I'm working with end up working the wrong way trying by all means to put things together. That is the difficult situation." (HSR underground platinum mineworker age 35)

Similarly incentivized safety targets also had limitations and encouraged OHS incidents to be hidden.

"We end up hiding incidents underground because of the incentive. We know if you go and report the incident then it means no bonuses for the team." (HSR underground gold mineworker age 41)

HSRs presented pressure as pervasive in the workplace and described discussions with co-workers that sought to identify strategies to "*avoid the management being behind our backs the whole time." (HSR underground diamond mineworker age 24)* or to *"ease" (HSR underground gold mineworker age 41)* the work pressure issue.

4.6.3.2 The perceived role of HSRs and OHS transgressions

Although the role described by South African HSRs mapped well against the Harris framework, HSRs described incidents where their own HSR activities left them exposed to and/or committing an OHS transgression. In all such instances, HSRs did not question how they had been placed in such an invidious position. An example of this, was the HSR who described himself as responsible for the provision of dust masks to co-workers, when they were working at the crusher. On the day he was unable to collect masks from the storeroom, he encouraged co-workers to improvise with cloths.

"I make sure that I go and collect them [dust masks] every chance I get. I had a problem on Monday where we didn't have them at the crusher, we have to find a way to cover ourselves from the dust. We found cloths and covered ourselves with them." (HSR underground gold mineworker age 22)

In another case, the HSR took on the completion of the employer safety, health and environment (SHE) file. Having agreed to this, he then described his shortcomings that were picked up, on inspection of the file.

"The other day one of the safety people, …came to fetch our safety files…..she went through the files thoroughly, she made very descriptive notes about the things that are wrong. One of the things that came up was that every six months we have an attendant appointment that has to be signed off by all belt attendants. It is my responsibility to do it because I took on the SHE files. I forgot to do them they were supposed to be done in January and I only did them this month February. It is things like that that you forget to do." (HSR surface diamond mineworker age 26)

The exception to the Harris framework for HSR activity was the support provided by South African HSRs to worker health and wellness. When workers arrived sick or emotionally distressed, HSRs described contributing to decision making that resulted in absenteeism and the re-organisation of workloads. By allocating the distressed worker lighter tasks, or advising the individual to take sick leave, the HSR inevitably escalated pressure and/or increased the workload for co-workers. In a hazardous underground workplace with incentivized production targets this could have marked OHS consequence.

"Yeh if a person is not so good, he is also no good to work because you might have stress and your mind is not at that thing that you are doing so you might get injured ... so we

encourage the person to sit down and not work fully for that day." (HSR underground gold mineworker age 22)

4.6.3.3 HSRs have knowledge but are unable to bring about change

HSRs spoke from a position of OHS knowledge gained either through training or/and experience. This meant in some instances HSRs were equipped to challenge common informal practices outside mine standards used to break production blockages, such as, looking for equipment in old workplaces in the event of equipment delays (Phakathi, 2018).

"That is why they sent us to the Training Centre whereby we are trained as the safety reps. Safety clearly states that underground we don't have to go to the old workplaces and look for equipment. We have to have to equipment available so that we can perform." (HSR underground gold mineworker age 45)

However, in many instances it appeared that HSRs were unable to utilize this. HSRs pointed to the contradiction of holding OHS knowledge, but this not taking precedence in the workplace. HSRs reported they are not listened to, and that they were unable to get their concerns taken seriously in shift or shaft level meetings, or through direct engagement with supervisors and/or management.

"The ones [workers] *that are affected by the dust and the cold…When they tell us they expect us* [HSRs] *to take the matter to the superiors. When we take it to the superiors we expect to see results, of which we don't see. We attend meetings every month. The things that we talk about are the issues that were spoken about since the first time I became a safety rep, and it's been two years since I have been here." (HSR underground diamond mineworker age 34)*

"Most of the time no one takes us seriously, for example maybe if you tell someone that we cannot work there because the area has no water and it has fumes. They will tell you that can't you see that the area is ok. We do talk and express our views but no one listens." (HSR underground gold mineworker age 24)

"The pressure we felt, was from the supervisor. He wanted what he wanted. Yet our plan was to support and blast the next day. We know what we are talking about because we have worked at this place longer than him." (HSR underground gold mineworker age 41)

4.6.4 Domain 4: Consequence and penalties faced by HSRs

The sum total of their inadequate preparation, the activities undertaken by HSRs and working within a context that left HSRs routinely exposed to OHS transgressions resulted in HSRs facing personal consequence. Primarily, this was felt through their own expression of

personal responsibility, but also experienced because of their vulnerability to direct action being taken against them. In interviews with HSRs it was apparent that HSRs expressed an astonishing degree of personal responsibility, or accountability for OHS incidents committed by co-workers they represented. This coupled with the sense that the employer '*seeks out*' or '*comes for*' the HSR in the event of an OHS incident. In more extreme cases the HSRs described employer action been taken against them, either by being moved out of the immediate workplace, and in one case being suspended.

4.6.4.1 HSRs feel accountable for OHS transgressions

HSRs reported that the reality of effectively having *"two jobs"* (the job of employment and the role of a workplace HSR) made it impossible to always know what was happening in the workplace, and that safety incidents happen when your back is turned, and about which you will have to explain or account.

"Sometimes I think it's too much for a person to do his job and be on a lookout for other people. Sometimes I would be working and not notice an incident that is happening behind me and then I will be held accountable for the incident." (HSR underground gold mineworker age 22)

Being an HSR was described as *"risky"* or requiring one to be *"on guard all the time" (HSR underground gold mineworker age 22)* and that administrative paper work should be meticulous so that you are protected from blame. The force of these descriptions is significant, and the individual HSRs accentuated these points by emphasizing their underlying fear of either losing his/her job, or by stating that workers did not want to be HSRs.

"Being a safety rep is risky. Once someone gets injured they [employer] *want the safety rep. People don't want to be safety reps." (HSR underground gold mineworker age 36)*

"You must be careful. Number one, make sure that everything you do must be in black and white. If they ask you why did this thing happen? You must be able to answer that. Everything must be jotted down- ….If you do not do that tomorrow you might be in trouble, you might find yourself going to jail. You can lose your job. As a health and safety rep, if someone dies you must be able to answer." (HSR surface platinum mineworker age 44)

Even in instances where the HSR had brought an OHS transgression to the attention of the supervisor the fear of this becoming a problem for the individual HSR did not dissipate, as described below in the case of an untrained lift operator. Audits of the workplace were also

described by an HSR as *'stressful'* because they were regarded as a measure of the performance of both the workplace supervisor and the HSR and a check of, *"whether you have done your job properly." (HSR surface diamond mineworker age 45)*

"The lift operator was not trained to control the lift, I always tell my superiors to take that person to the training. They say they will take him but till today he was not taken to the training and it's been 4 months now doing this job without training and the law does not allow that. If someone is not trained there might be a mistake that could cause a danger and people will be injured, then the person who controls the lift will be needed to produce his certificate to show he was trained to do the job. If he does not have it that could become my problem that's what I'm afraid of." (HSR underground platinum mineworker age 44)

4.6.4.2 Actions are taken against HSRs

Perhaps the most serious charge that HSRs described were employer actions being taken against them. In the main this appeared to be informal management actions as opposed to formal disciplinary procedures, whereby HSRs were moved out of the immediate workplace to facilitate informal work practices to reach production targets.

"For instance there is a time where people just want to work. But because the safety rep is there, they feel that they have to move him so that they can do one, two, three. If you are there and asking questions, then it's a problem between you and that person, especially the supervisors." (HSR underground diamond mineworker age 34)

However, the application of formal disciplinary actions against HSRs should not be overlooked and it may be worthy of further investigation. In this study, one respondent described being suspended from work for 2 months as a direct result of his/her role as HSR because of the conflict that had arisen between him/her and with both workers and supervisors.

"The workers do not follow the rules when they work. I told them they must work according to the rules. They said, "Hey you, you are delaying us, you are preventing us from working! You bring the foreign law, because we do not know where you get these rules from". When you are using this thing you must wear gloves. When you are using cement you must wear gloves. I was suspended for 2 months. They said we can see you are big headed, we are removing you from here." (HSR surface platinum mineworker age 44)

4.7 Discussion

It could be surmised that the overall positive OHS performance of the South African mining sector since the promulgation of the MHSA speaks, in part, to the positive association found

between OHS performance and arrangements for worker representation(Nichols et al., 2007; Walters, Quinlan, et al., 2016b; Walters and Nichols, 2007). However this study highlights the limitations to worker representation on South African mines. Figure **6** summarises the findings with respect to the '*creeping responsibilisation'* that HSRs experienced on South African mines. It illustrates that the culmination of the inadequate preparation for their role (Domain 1), the present manifestation of HSR day-to-day activities (Domain 2) and, the workplace context of regular exposure to OHS transgressions, against which HSRs report being unable to act (Domain 3), left HSRs vulnerable to personal consequence and employer penalties (Domain 4). The study concurs with an earlier study of the implementation of the RLDW that found workers reported that HSRs were unable to escalate issues effectively beyond the immediate workplace (Coulson et al., 2019). The findings raise some alarm about worker representation in OHS, because without change, the role of HSR would be untenable for many workers, who would rather not be burdened with the worry and/or the threat of possible action. Thus, although South Africa has a statutory system of worker representation, *'creeping responsibilisation,'* means representation and individual representatives are vulnerable, which is entirely contrary to the intentions of both the MHSA and ILO C176, which expressly protect representatives from discrimination in this role.

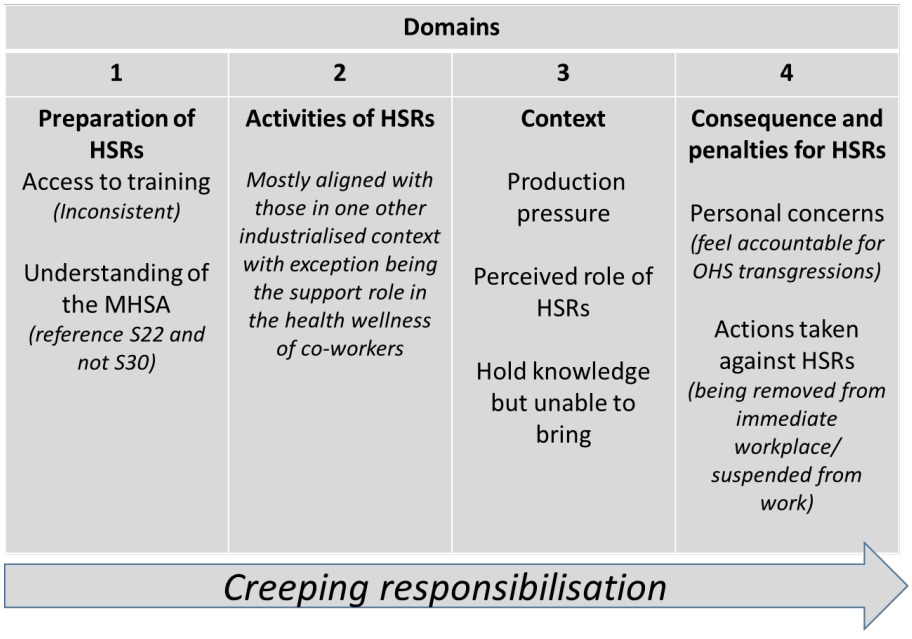


Figure 6: Evidence for HSR's experience of *'creeping responsibilisation'* on South African mines.

The pre-conditions for worker representation (Walters and Nichols, 2007) rely on both the individual, and collaborative, commitments of the tripartite OHS role-players (employer,

regulator and organised labour) and, that HSRs are well trained. First off, the employer needs to demonstrate capacity and willingness to support participative arrangements, and ensure the competent identification and management of hazards; the regulator, sufficient regulatory steer; and organised labour, the capacity to lead an autonomous system of worker representatives, who are well trained. Since the promulgation of the MHSA, the statutory tripartite structures of the Act (the Mine Health and Safety Council (MHSC) and the Mining Qualifications Authority (MQA)) lead sector-wide developments for OHS. This has met with success and the sector-wide OHS milestones 2003 and 2014 (Mine Health and Safety Council, 2014; Msiza, 2014), the OHS 'Culture Transformation Framework' (Mine Health and Safety Council, 2011b) and the training of HSRs are three examples, of interventions emanating from these structures. The exception to this being the employer led sector-wide Mine Occupational Safety and Health (MOSH) Leading Practices Adoption System, which only as it rolled out, out of necessity fostered closer ties with the regulator and organised labour (Hermanus et al., 2015). Thus the sector has demonstrated significant joint action and commitment in the 20 years post the MHSA, but as of now, has seemingly been unable to produce the necessary pre-conditions for worker representation that could have protected HSRs from *'creeping responsibilisation.'*

The '*responsibilisation'* thesis of this paper found weaknesses in the preparation of HSRs (refer to Domain 1, Figure **6**). Currently, although training is centrally co-ordinated through the MQA, one obviously difficulty is that the employer has significant opportunity to bias the content of the programme, which disadvantages the collective OHS worker voice of organised labour. HSRs reliance on section 22 (individual OHS responsibilities of workers), rather than section 30 (rights and powers HSRs) (refer to findings in Domain 1) as the underlying mandate for their role speaks to employer interests and bias. This is because Section 22 forefronts the OHS behaviour of workers which is vastly different to Section 30 that equips an HSR to represent employees' interests, with respect to OHS, to the employer. Neither section make an individual worker responsible for the behaviours of other co-workers, but section 22 with its focus on behaviour, is more easily open to manipulation, to back-up employer interests for the behaviour of workers to be policed.

However these are certainly not the only problems with HSR training. Estimates in the sector are that there are up to 40 000 HSRs who at any one time should be trained and/or undergoing training. A study commissioned by the MHSC in 2013, is not publicly available, and is the only evaluation of HSR training to date. Nonetheless, one concern, for which there

is some evidence in this study, is that many HSRs do not get sufficient time out of the workplace to complete all three courses, and that very few representatives are fully trained for their role. Conceivably, the design of the training programme over 15 days is unrealistic given the significant numbers of HSRs to be trained. In 2011, to fast track training, targets for HSR training were set by the DMR under the amended Mining Charter.[8] Set as one of six measures to address OHS, an evaluation of the achievements of the Charter showed only 1.6% of mining rights holders (weighted data) complied with all six OHS measures that included the training of HSRs (Department of Mineral Resources, 2015) . A second concern with HSR training is that it has not kept pace with changes in the sector. Training is set at NQF level 2, equivalent to 3 years of South African high school (this is school leaving age 16/Grade 10). The education profile of mineworkers has changed significantly in the last two decades with the entry of millennials into the mine workforce (Phakathi, 2018). In this study, around 40% of the sample reported not having reached this level of schooling, whilst more than 50% reported having exceeded it. The MQA 2017-18 Sector Skills Plan (SSP) concurs and states that 47% of mineworkers have achieved the equivalent of upper high school levels (grades 10-12) (Mining Qualifications Authority, 2016) Only 22% of the sectors' employees have between grades 4-9 of schooling. These figures suggest that the training offered to HSRs should be considerably more diverse to cater for the divergent education experience of mineworkers. It would also suggest that there is the opportunity to introduce a cadre of HSRs to an advanced set of skills.

Another concern is that the OHS content is shaped by the priorities that historically, and today, beset the gold sector. Gold, although not the only offender, is still the worst offender with respect to fatalities, injury, silicosis and noise induced hearing loss (Department of Mineral Resources, 2017). A recent global review for the International Commission on Occupational Health (ICOH) presented an expanded list of contemporary OHS priorities for mining that included accidents, lung diseases, cancers, toxic chemicals, hearing loss, heavy work and musculoskeletal disorders, vibration, heat and cold stress, high altitude and psycho-social risks (Elgstrand et al., 2017a, 2017b, 2017c). Today, the single largest category of mineworkers in South Africa come not from gold, but the platinum group metals (33.8%) (Mining Qualifications Authority, 2016). Platinum, for example, has witnessed a rapid escalation in contract labour (Forrest, 2015) and has had more success with the introduction

[8] The Mining Charter is a regulatory tool used by the DMR to drive transformation and address inequalities in the mining sector. Its primary focus is the promotion of black ownership and to drive the promotion of historically disadvantaged South Africans within the management of the industry. The amended Mining Charter included some OHS commitments.

of some mechanisation than the gold sector, both of which profoundly shape OHS concerns for today and the future (Gunningham, 2008; Vogt and Hattingh, 2016). The desultory record of training delivery and the obscurity of information about HSR training calls into question the capacity, or willingness, of the sector to prepare representatives, as per the requirements of the MHSA. HSRs are shut out and disadvantaged by this.

If we accept that *'creeping responsibilisation'* is an outcome of the absence of important pre-conditions for worker representation then our attention must turn to the role of tripartite role-players. Of global concern is the emergence of management unitarism (Walters, Quinlan, et al., 2016a, 2016b) and that behaviour-based management systems have shaped the role of HSRs to do the work of management, described in at least one other study as a shift to '*responsibilisation'* (Walters and Wadsworth, 2017). Critical to autonomous worker representation, management must demonstrate support for the participative approach. In South Africa, existing evidence is that the employer is poorly disposed to an autonomous system of worker representation. An evaluation of the industry led sector-wide MOSH initiative found that MOSH had by-passed structures for worker representatives, despite its rhetoric of worker participation, choosing in preference, to facilitate worker participation through the use of survey tools to develop *'mental models'* (Hermanus et al., 2015). The regulator also strengthened the hand of the employer, in relation to worker representatives, in its most recent guidance with regard to the RLDW (Department of Mineral Resources, 2016b). It institutes a high level dispute mechanism in which a deadlock is brokered through a technical adviser and the employer, and in which, the regulator is absent, leaving workers who challenge and escalate issues with respect to a dangerous workplace, adrift from the essential regulatory steer.

What then has happened to organised labour? The pre-condition for autonomous worker representatives supported by an external union appears poorly established. Despite 84% union membership amongst HSRs (n=25) in this study, HSRs had a very poor appreciation of the role of the collective worker voice in OHS outcomes. One reason for this is the absence of trade unions in the training of HSRs as already discussed. The collapse of the MQA programme in 2010 saw the employer take a step forward and unions take a step back with respect to HSR training. Only very recently, in 2017, has the National Union of Mineworkers (NUM) re-engaged and is preparing new training materials, against the existing MQA accredited unit standards. Global studies in advanced economies have shown that training, especially training when facilitated through trade unions is important in the preparation of

HSRs for their role (Walters, 1996b). This is made more urgent given the rise of employer dominance. Zwi et al. (1988) writing about OHS regulatory change in South Africa remarked that at the time NUM relied on two full-time employees to co-ordinate labour's OHS response to the apartheid mining regime. To a very large extent, the same could be said today. The transition to democracy and the MHSA has not seen investment in the OHS capacity of labour to meet its statutory commitments under the Act. An additional hindrance to labour's capacity to lead, is the absence of guidance in the sector about the role of HSRs, other than the rights and intention described under the legislation. HSRs in this study described undertaking activities that they perceived as their role, that in practice facilitated employer OHS compliance, such as distributing PPE, or completing the OHS file, or facilitating alternative arrangements for sick or emotionally distressed mineworkers (Refer to findings in Domain 3). Guidance into the sector about the implementation of the role of HSRs is a gap that organised labour in collaboration with the regulator should have closed years ago.

The discrimination, personal stress and punitive action taken against HSRs (described in Domain 4, Figure 6) is not an accepted face of global worker representation and the South African mining sector should act to address this directly. A contributory factor to this undoubtedly is the OHS culture found on South African mines. Detailed in the MHSC *'Changing Minds, Changing Mines'* report (Shaw, 2010), the report was unambiguous and found that blame, persistent racism, and lack of capacity building were a strong feature of the South African mining industry, especially for those at the low end of the hierarchy. The production and safety bonuses found in this study to hamper the actions of HSRs (refer to Domain 3, Figure 6) were also found to create considerable problems for OHS behaviour. With up to 50% of respondents reporting that production bonuses often caused problems (Shaw, 2010). These challenges persist (Coulson et al., 2019; Phakathi, 2018). The MHSC launched the 'Culture Transformation Framework' in 2011 to address OHS culture, but a substantive shift is taking time, as shown in this study. There is also some evidence that more recent changes to the labour regime, towards the increased use of externalised contract labour, coupled with the present enforcement tactic of the regulator that regularly results in the partial or total halting of mining operations, further contributes to these complexities (Forrest, 2015). Nevertheless, however beguiling a conducive OHS culture may seem, it is not a precondition for worker representation (Walters and Nichols, 2007), although the unacceptable face of discrimination faced by HSRs, could be confronted through the sector's 'Culture Transformation Framework'.

4.8 Conclusion

The South African experience of worker elected HSRs is pioneering on the continent and therefore may hold lessons for other African states that seek to strengthen their own OHS commitments. However, the results here point to a system of worker representation that is under pressure. Twenty years on from the introduction of worker selected HSRs onto South African mines under the MHSA, the evidence is that HSRs are victim to '*creeping responsibilisation*.' Although the tripartite role-players have successfully come together in the sector to take forward important OHS concerns, this has not resulted in them meeting the pre-conditions for effective worker representation. Instead the hand of the employer in relation to worker representation has been strengthened. Although tripartite role-players may look to organised labour for leadership to change this, the commitment to worker representation needs to be made by all role-players. There are a number of concrete actions that could be taken, of which, resourcing labour to train HSRs is a priority. Guidance should be developed for the sector about the role and activities of HSRs, and the discrimination and intimidation of HSRs experienced as a result of '*creeping responsibilisation'* should be a sector-wide concern.

Chapter 5

5 Paper 2: How worker health and safety representatives are captured and out done by production on South African mines

5.1 Abstract

Post-apartheid, under the Mine Health and Safety Act No. 29 of 1996, workers elect health and safety representatives (HSRs). Descriptive case studies were conducted at four underground mine sites (gold, platinum and diamond) to explore the relationship between employer safety management and HSRs. A systems approach (socio-autopoiesis) is used as a metaphor for the circular/closed -communication that ensured HSRs were dominated by employer interests and let down by the regulator. The stance of the employer to worker representation has not significantly changed since the managerial self-regulation at the demise of the apartheid years. Given union membership is high the capacity of HSRs to act without reference to management is uniquely compromised and presents as an anomaly in studies of worker representatives worldwide.

Key words: occupational health and safety, regulation, worker representatives

5.2 Introduction

One of the objectives of the South African Mine Health and Safety Act (MHSA) No 29 of 1996 as amended (Republic of South Africa, 1996) is the participation of workers in their own occupational health and safety (OHS) through the appointment of worker selected/elected health and safety representatives (HSRs). Under Chapter 3 of the MHSA, the appointment of these representatives is subject to the outcomes of a negotiated health and safety collective agreement agreed with recognised trade unions at a mine site. Estimates are that 80% of the approximately 450 000 employees in the mining sector are unionised (Bhorat et al., 2014: 5). On large mines the arrangements for HSRs will be negotiated primarily with one of the two dominant trade unions, the National Union of Mineworkers (NUM) and the Association of Mineworkers and Construction Union (AMCU).

A 2008 sector-wide audit of the arrangements for HSRs in South Africa reported two thirds compliance amongst mines (Department of Minerals and Energy, 2008). Globally arrangements for HSRs are well established and are associated with positive OHS outcomes (Nichols et al., 2007; Walters, Quinlan, et al., 2016b; Walters and Nichols, 2007). In South Africa, since the promulgation of the MHSA post-apartheid, there have been dramatic improvements in mine safety with an 87% reduction in fatalities over the period 1993 to

2015, (Phakathi, 2016: 5). Mine fatalities were at a record low in 2016 (Department of Mineral Resources, 2017) and the formal South African mining sector is shown by industry to perform on a par with other benchmark mining nations, such as Canada and the USA (Phakathi, 2016). Hermanus et al. (2019) argue that this dramatic improvement in safety statistics is, however, not down to substantive improvement in OHS work practice alone, but that the concurrent drop in mineworkers employed in the gold sector has made for the significant difference. The gold sector even today has the highest fatality rate of all the South African mining commodities (Department of Mineral Resources, 2017: 16). Occupational health improvements are less clear cut too, partly because of poor data and reporting, and only recently has the Department of Mineral Resources (DMR), Mine Health and Safety Inspectorate (MHSI) reported a reduction in cases of occupational disease such as silicosis, pulmonary tuberculosis and noise induced hearing loss (NHIL) (Department of Mineral Resources, 2017:41). Overall despite the limitations, the improvements in mine safety performance in particular, speak to the positive association found between the presence of HSRs and OHS outcomes.

The arrangements for HSRs are well described in highly-industrialised contexts (although not necessarily always well described in the mining sector). Descriptions of worker representation in a middle income and newly democratised country such as South Africa are very limited. Arrangements worldwide centre either around joint employer/employee health and safety committees, such as in France (Coutrot, 2009), and/or worker appointed HSRs such as in Canada, Australia and in European countries such as the UK, the Nordic countries and Spain (Frick, 2013; Garcia et al., 2007; Hovden et al., 2008; Milgate et al., 2002; Nichols and Walters, 2009; Walters, Quinlan, et al., 2016b). It is the appointment of HSRs which is most relevant to South Africa, because large numbers of HSRs are appointed under the MHSA. Article 13 of the ILO Safety and Health in Mining Convention 176 makes provision for HSRs, with which the MHSA complies (ILO, 1995). However, all global arrangements are contextual and characterised by the varied relationship with organised labour and their effectiveness is often bound up in this (Walters, 1996a, 2006). Other pre-conditions of necessity to autonomous worker representation include the regulator as a supportive legislative steer and the commitment of senior representatives of the employer to a system of representation (Walters, 2006; Walters and Nichols, 2007). A study conducted in Queensland coal mining, Australia (union density similar to South African mines, more than 75% for 12 of the 19 mines included in the study (Walters, Quinlan et al., 2016a: 383)) found representatives were highly effective in the inspection of fatal risks and high potential

incidents, and in their resistance to the employer, by relying heavily on the legislation to make meaning of their role, and by reporting regularly to structures of the major mining union (Walters, Quinlan et al., 2016a).

Although the MHSA provides direction with respect to the rights and powers of HSRs, it does not stipulate how their interaction with the employer should happen in practice. For example, it does not describe how the HSR in the event of a complaint from a worker/s will in practice take this complaint further, other than scope out the parameters of this engagement under the relevant section of the Act (Section 30). Given the context of significant safety improvement in South Africa, this paper explores the role of HSRs in the safety management system and their engagement with the safety appointments of the employer. To do this a systems perspective that draws on Luhmann's socio-autopoiesis (Luhmann, 1995) was used to frame the interactions of HSRs with the key role-players in the safety management system. This was achieved by recounting and capturing in a diagrammatic form the communications and interactions between the key role-players as they were described. The implications of these interactions were then considered with respect to the experience of HSRs.

5.2.1 Employer and employee responsibilities and mandatory appointments under the MHSA

The MHSA determines the rights and responsibilities of both employer and employee representatives. The employer carries a statutory duty of care and responsibility for risk management. However, it is also a compulsory requirement for worker participation in risk management, and the employer must consult with both HSRs and the mine health and safety committee about the OHS measures to address workplace hazards. Rights of HSRs (Section 30) are broadly to, make *'representation'* and/or *'recommendation'* to the employer on any matter related to OHS that is affecting workers; secondly, to contribute to the identification of potential hazards and risks to OHS, and to support the inspection of the workplace; thirdly, to investigate worker complaints regarding OHS. They have powers within their designated workplaces to participate in any OHS inspection, internal audit, consultations with the employer or an inspector from the DMR-MHSI and to request technical assistance with the support of the employer. Section 23 (b) instructs the HSR to direct a worker/s to leave a workplace which appears to the HSR to pose a serious danger to OHS.

To ensure that both the employer and employees have the necessary capacity to meet their OHS responsibilities the MHSA sets out mandatory appointments. These appointments frame the mine safety management system. Mandatory appointments are stipulated for the day-to-day operational activities of the mine and for expert OHS functions. The employer must appoint a mine manager (section 3(1)(a)) responsible for day-to-day activities such as the training of employees, risk assessment, health and medical surveillance programmes, ensuring safe and healthy working conditions and the production activities of mining. On very large mines this obligatory appointment will be found per shaft or section and will report in to an employer representative (a discretionary appointment made by the employer, section 4(1)). Obligatory appointments must also be made with respect to OHS expertise. Specifically for safety, the Chief safety officer (Minerals Act regulation 2.17.4) and safety officer (Minerals Act regulation 2.17.1) who may report to either the section 3(1)(a) or section 4(1) appointment.

There are three types of worker HSRs found on South African mines, two of which are mandatory and appointed under the MHSA, the workplace HSR (WHSR)(section 29) and the full-time HSR (FTHSR) (section 26, regulation 6.9.a). The third type of representative are members of the trade union health and safety structure of the local branch or shaft committee and are not appointed under the MHSA. It is required under the MHSA that every mine with 20 or more employees must have a WHSR elected by workers (Section 29 (1)) for each shift at each designated working place at the mine (Section 25(1)) who is responsible for no more than 100 employees. By law WHSRs are given time to fulfil this function, alongside their normal job of employment. Section 26 makes provision for the appointment of a FTHSR subject to an election. A FTHSR relinquishes his or her job of employment for the period of appointment (usually 3 years). In contrast to the WHSR, the FTHSR is not restricted to a designated workplace and may exercise his or her powers in all parts of the mine for which they are appointed. These arrangements with regards to the numbers, term of office, designated work areas and election process are subject to the mine health and safety collective agreement signed with recognised trade unions on site. On large platinum and gold mines the election of WHSRs usually involves the selection of an alternative too, which on a very large mine effectively means there are several hundred WHSRs on site. Between two and four FTHSRs are commonly appointed per shaft. In comparison with similar mandatory arrangements in advanced economies, the arrangements for worker representation under the MHSA can be considered generous. Both with respect to the large

numbers of worker elected HSRs on site and because a collective agreement underpins this. For example, FTHSRs once appointed are awarded a significant pay increase under the collective agreement, commensurate to the arrangements that are commonplace for shop stewards on South African mines appointed under the Labour Relations Act No 66 of 1995 (Republic of South Africa, 2002).

The third type of HSR are union members appointed through union processes to the branch or shaft health and safety structure. Individuals in these positions are most often full-time shop stewards located on the mine site at the union office. There are up to five members of the branch health and safety structure, a chair and deputy, secretary and deputy and treasurer. This structure first appeared on South African mines at the end of the 1980s, where NUM had successfully demanded workplace safety stewards and committees (Stewart and Nite, 2017). Although this structure is not described under the MHSA, this arrangement is perpetuated on large mines. Reference to members from the health and safety structure of organised labour is made using the abbreviation, union health and safety structure (UHSS) in this paper.

Although the MHSA makes provision for a mine health and safety committee constituted by employer and employee representatives including HSRs, a discussion of this structure is not included in this paper (note this is a statutory arrangement under the MHSA and not the same as the UHSS described above). Albeit the rights and powers of the mine health and safety committee are extensive and echo those of HSRs, namely "*represent employees on all aspects of health and safety"* (section 36 (1)(a)). Figure **7** summarises the employer/HSR arrangements found on large mines for safety management.

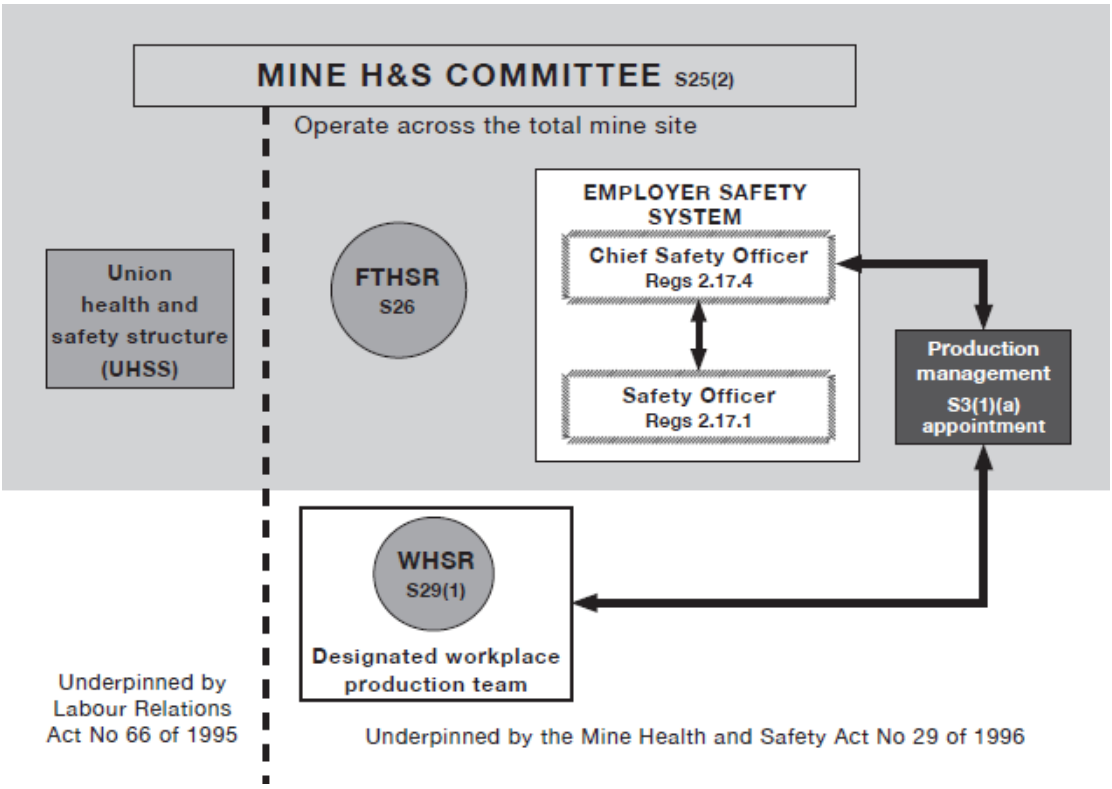


Figure 7: Components of the employer and HSR mine safety management system.

5.2.2 Enforcement practice of the regulator

The intention of the MHSA is to keep HSRs abreast and involved in important developments that involve the DMR MHSI. The employer is required to inform HSRs of the inspectorate's notice to be on site, and as soon as is practicable, of any serious accident or dangerous occurrence, and to supply a copy of any inspectorate instruction, to the HSR representing employees affected by it. HSRs hold the right to participate in consultations with both the employer and inspector. Non-compliance by the employer with provisions of the MHSA has in the last decade been policed firmly by the MHSI through the issuing of section 55 (inspector instructions for example, to close an affected area) and section 54 penalties (halting part or the whole mine operation) (Chamber of Mines South Africa, 2017). In the event of a section 54 being issued mine management and HSRs are required to jointly make representations to the satisfaction of a Principal Inspector about remedial actions undertaken to address the non-compliance prior to the lifting of the sanction.

5.3 Methodology

A multiple-case study design was used which comprised four mine sites where data was collected between February 2015 and December 2016 to explore the practice of HSRs. The mine sites (classified using the profile developed by the International Council on Mining and

Metals (ICMM) (ICMM, 2012) included two global senior mining companies (asset base US$ 3 Billion and above) and two intermediate mining companies (asset base US$ 1-3 Billion) with underground operations and more than 500 employees on site. The purposive sample included gold (n=1), platinum (n=2) and diamond (n=1) mines. All sites had signed health and safety collective agreements. Three sites had a formal union health and safety structure (UHSS) on site, with the exception being site 2, a platinum mine. Site 2 signed a recognition agreement with the trade union AMCU around the time research commenced, so although there was a union OHS representative on site and a signed health and safety agreement, the formal 5 member UHHS was absent. Sites 3 and 4 had signed recognition and health and safety agreements with NUM. Site 1 recognised both NUM and AMCU, and was in the process of rewriting the health and safety agreement to include AMCU alongside NUM.

Table **11** summarises data collection at 4 sites with respect to the involvement of HSRs in the safety management system. In-depth interviews (n=31) of 60 minutes or more, using a semi-structured guide, were conducted. FTHSRs (n=10) were interviewed up to three times over a maximum period of 18 months about their involvement in safety management. In total 22 interviews were conducted with FTHSRs. The interviews explored FTHSRs perceptions of their:

- Preparation for the role
- Understanding of the role in relation to the statute, and
- Day-to-day activities with a specific exploration of the day before the interview
- Challenges commonplace in the execution of their daily activities
- Their relationship with organised labour.

In-depth interviews were also conducted with safety managers (n=5), and the UHSS (n=4). These interviews explored their understanding and engagement with FTHSRs. Focus groups (n=4) involving workers (n=37) were conducted with between 8-11 workers per group to understand workers' perceptions of HSRs and specifically the FTHSR.

The study sites included global senior and intermediate mine operations with >500 employees on site. Therefore the findings may not resonate with small scale or junior producers where the role of HSRs may take a different form.

Table 11: Data collection at 4 mine sites between February 2015 and December 2016.

Case study sites	**# respondent on Site 1 Gold**	**# respondent Site 2 Platinum**	**# respondent on Site 3 Diamond**	**# respondent on Site 4 Platinum**	**Total # respondents**	**Total # interviews on site**
Start date	Feb-15	Jun-15	Mar-15	Jul-15		
End date	Feb-16	Dec-16	April-16	Sept-16		
Safety management						
Senior OHS manager	1		1	1	3	3
Chief safety officer		1			1	1
Management co-ordinator HSRs				1	1	1
Workers						
Focus groups with production workers*	1	1	1	1	37 production workers in total	4 focus groups
HSRs						
FTHSRs	2	2	3	3	10	22**
Union H&S structure	2	1	2	1	6	4

*between 8-11 production workers per focus group

**FTHRs interviewed three times over the period of a year about matters related to safety

Ethics clearance was provided by the Human Research Ethics Committee (HREC)-Medical, University of Witwatersrand, Clearance Certificate No. M140701. Participation in the study was voluntary and with informed consent. The analysis took the form of cross case synthesis because the data told a consistent story across all four sites (Yin, 2014). Transcribed data was thematically analysed using Max QDA 12 using deductive and inductive codes. Two experienced qualitative researchers met to determine interrater reliability and to check for consensus and consistency.

5.4 Results

5.4.1 The employer/HSR safety management system in practice

Figure **8** and Figure **9** illustrate the findings with respect to the employer/employee safety management system in practice. The results showed FTHSRs were engaged in two circular communication loops. The first communication loop referred to here as *'Loop 1: Workplace production and safety'* concerned the day-to-day interactions between safety management, production management and the two tier system of HSRs (FTHSRs and WHSRs). The second communication loop referred to as *'Loop 2: Compliance and enforcement'* concerned the

unscheduled, but regular interactions between the DMR -MHSI, mine management, the safety department, FTHSR and UHSS.

FTHSRs at all four sites operated within the parameters of these communication loops. While role-players in both of these circles of communication could point to some positive outcomes for the employer/HSR safety system, there were also ubiquitous difficulties. The results discuss the interactions and difficulties for HSRs operating within the two loops.

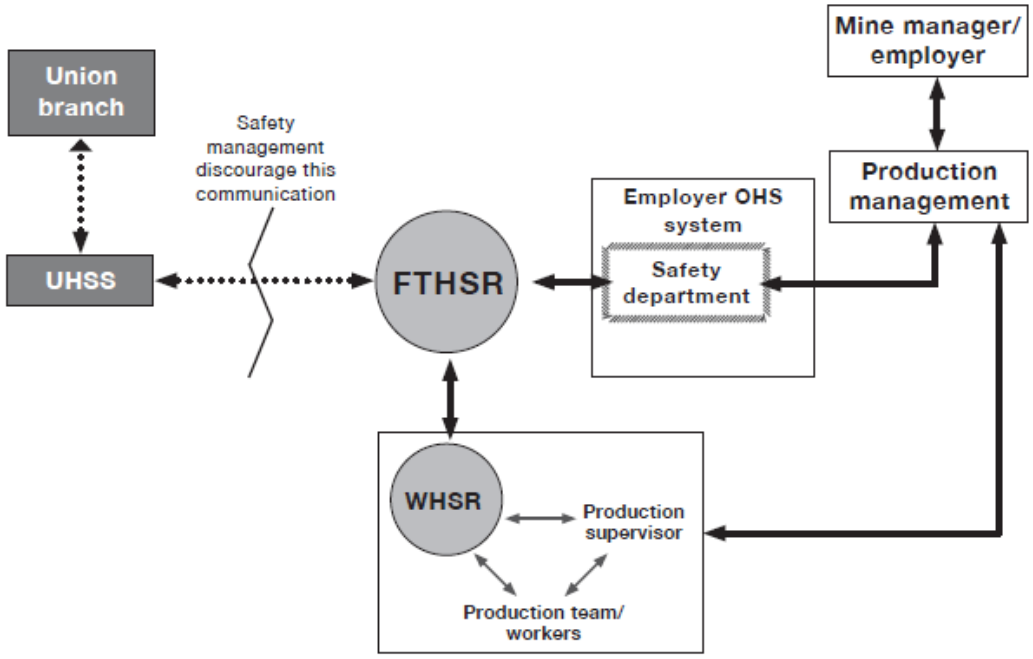


Figure 8: The employer-HSR safety management system, Loop 1: Production and Safety. A schematic diagram of the major interactions between the primary role players.

5.4.2 Loop 1: Workplace production and safety

5.4.2.1 HSRs provided a two-tier communication system for safety management

FTHSRs and WHSRs created a two-tier communication channel for safety management into the workplace. At all sites the FTHSR reported in to the safety department and FTHSRs were required to interact on a daily basis with WHSRs. As a consequence, the safety department interfaced with the system of production both, through the WHSR and production supervisor in the designated workplace, and through daily meetings held with senior production management. This created a powerful circular channel of communication and interaction between safety practitioners, production management and HSRs (illustrated by solid lines between the role-players on Figure 8). These interactions worked in two ways down to, and up from designated workplaces.

Senior safety management expected the chief safety officer and/or safety officer to issue instructions to the FTHSRs and they in turn were expected to act as supervisors of WHSRs. Management talked of FTHSRs having *'subordinates'* and their challenge was to get to know the WHSRs. Via this system, HSRs (FTHSRs and WHSRs) were described as able to *"assist"* or *"work hand-in-hand"* with safety management. FTHSRs co-operated with this and stated that they were part of the safety department and pointed to a thin line between their role and that of the safety officer. One FTHSR stated that a safety officer had a designated section of the mine, while the FTHSR worked across the whole mine site (FTHSR diamond).

The two-tier communication system had a two-fold purpose for the safety department, firstly to reinforce mine standards and safety procedure, described by one safety manager as, *"they [HSRs] can be your voice to the lower level"* (Safety manager diamond). And secondly to surface OHS problems with the intention to bring these to the attention of management. FTHSRs and WHSRs were described as management's *"eyes and ears"* (Safety manager diamond) or *"watchdogs underground"* (Safety manager platinum). Safety management underpinned this role by emphasizing the role of HSRs in continuous risk assessment and by underlining the extent to which human error is the major contributory factor to accidents.

"If it comes to safety, if you look at the stats for accidents its 90% human error. Why are the workers doing that, is not your role [HSRs] to go underground and talk to people? And say to people gentleman we do not comply we are chasing production not safety." (Safety manager gold)

Thus ensuring that workers were adhering to safety procedures, primarily through HSR workplace inspections as part of continuous risk assessment, speaking to workers and the completion of log books or incident notices, and follow-ups where there had been OHS transgressions were the critical activities of HSRs for safety management. The expectation being that OHS transgressions and problems would be brought to safety management's attention via the FTHSR, supported by the *"open door"* policy of senior safety management. This then created a fairly seamless communication channel that was welcomed by safety management. As a consequence of this, senior safety management described being close to the FTHSR or having a good relationship. One safety manager went as far to say *"If you take out*…[name of FTHSR] *there isn't a system"* (Safety manager platinum)

5.4.2.2 HSRs bridged communication gaps including language, racism and the trust deficit

HSRs and especially FTHSRs assisted safety management with the practicalities of communication. This included communicating information about safety practice in a local language, overcoming racialised communication obstacles between black workers and white managers and bridging the trust deficit between management and workers. FTHSRs (who were all black in this study) were believed by management to have the support/confidence of workers and WHSRs, in part because they were able to explain important safety procedure in a local language on behalf of management. One FTHSR described how safety management would turn to the FTHSR for help if they were having a problem with a group of workers by asking the FTHSR to accompany them. FTHSRs were seen as ideally placed to address the difficulties associated with race and trust at the behest of management on the basis that some workers, including WHSRs, would rather talk to a *"friend"* or *"colleague."* One safety manager made reference to a grown mineworker as a *"boy"* underscoring the above point about both race and trust. However safety management seemed unaware that some workers may see FTHSRs as too closely aligned with the safety department and therefore mine management, to disclose much,

"…maybe they [WHSRs] are afraid that if I [FTHSR] go to the captain I will tell him what they have done, they will tongue lash them. They will never give you the facts why they are doing this. When you pursue questioning him you will never find anything." (FTHSR gold)

5.4.2.3 Management did not support interactions between FTHSR and the UHSS

At three sites where the UHSS was present, all three safety managers were clear that HSRs and specifically the FTHSRs reported to management rather than to the trade union. One safety manager stated that HSRs were *"on their own they are neither with management nor are they with organised labour,"* (Safety manager platinum). Safety management used OHS knowledge to make the distinction between the different types of HSR. WHSRs through the FTHSRs reported into the safety department which meant they held an appreciation of the OHS system. Whilst, the UHSS was believed to spend "*90% of their time dealing with ER* [employee relations] *and HR* [human resource] *issues*" (Safety manager, diamond). The same safety manager stated, that an example of this, would be a discussion about body mass index (BMI) which would be seen as potentially victim blaming, and a threat to job security by the UHSS, and that there would be no appreciation of the underlying science.

Safety management saw the role of the FTHSR as being in the workplace and that attendance at union meetings meant, *".. the job of the fulltime suffers"* (Safety manager platinum). FTHSRs were obliged and in one case it was stated *"under law"* to report to

management and not report to the UHSS. Where there was some reporting to the UHSS, FTHSRs were described as having been taken advantage of, or that the union was trying to use the FTHSR for their own benefit.

"he was like on this meeting and that meeting and I said "no he is not supposed to be in this meeting that was not his role." I think he was abused, misused by the union for their advantage." (Safety manager diamond)

5.4.2.4 *The production and safety loop adds value, but FTHSRs looked to organised labour for back-up*

Safety management described serious OHS transgressions that were brought to their attention through the two- tier HSR system and they put in effort to enhance this. At site 2 management, for example, instituted a highly effective, anonymised incident report form that was handed directly to the FTHSR. FTHSRs also described successfully intervening in instances of serious non-compliant safety practice, such as a worker being requested to operate a winch for which they were not trained, but in these cases the FTHSR turned to organised labour as their *"back-up"* or "*bull-dozer in most cases"* (FTHSR platinum). In this instance, the FTHSR described conducting a follow up visit in the workplace to find out what was happening, stopping the production team in the workplace until a trained winch operator arrived on site, speaking with the supervisor, reporting to the UHSS on the shaft (for back-up) and then speaking with the shift boss and mine overseer. At other times too, FTHSRs relied on the UHSS for support to confront abusive supervisors who evaded pertinent safety questions,

"I asked the foreman and he shouted at me very much and he humbled himself only when I had called the shop steward [UHSS] *over… that showed me that he understood what I was asking of him… 'Why should that fire extinguisher be used and there be no report for it?'"* (FTHSR platinum)

5.4.2.5 *All role-players agree production was prioritised over safety and HSRs were powerless in this*

Safety management were unanimous in their condemnation of production management, supervisors and the culture of chasing production targets. Supervisors were described by safety management as *"tricky,"* lacking in *"trustworthiness," "bullying"* and *"disrespectful"* of HSRs especially WHSRs. The UHSS confirmed this and reported that WHSRs complained to them about the lack of respect from their supervisors. Across all four sites safety management described their active engagement with this culture, curbing the worst

excesses of it by speaking directly to, or devising strategies to deal with offenders. Safety management described one-on-one confrontations with supervisors, or generalized announcements on a shaft about unacceptable target chasing and their own coaching of supervisors. Witnesses, it was said to target chasing, were likely to be victimised which frustrated safety managements' efforts to deal directly with the main offenders. However, despite the pervasive bullying faced by the WHSR, safety management were of the opinion that the WHSR should ensure the supervisor does not push for production, and that the FTHSR must "*help the poor safety rep and they must have a concrete solution with the supervisors"* (Safety manager platinum)

"He [WHSR] *must understand he has got a dual role, he must look at both sides. Must make sure the workers comply and also the miner* [supervisor] *does not push the workers to slave purely for production."* (Safety manager gold)

The two-tier communication system thus surfaced not only safety problems, but production related problems too such as bonus payments, unfair treatment and production targets which are difficulties found in other studies too (Phakathi, 2018; Shaw, 2010). One safety manager was philosophical about this and suggested this was because many safety professionals have a background in production and are therefore, *"mining guys"* who can be relied on to get things done. There was no evidence that safety management tried to redirect these problems to other departments such as mine management, employee relations or human resources. Instead safety management described themselves as being in the middle, either dealing with production management who told stories to *"defend"* themselves, or being asked to intervene on behalf of HSRs, who may themselves *"backstab"* you. The perpetuation of this meant that WHSRs found themselves at the brunt of production disputes. Workers often frustrated by the poor outcome and the failure of HSRs to get their concerns addressed, blamed WHSRs for production related disputes, *"Something like the bonuses will always be an issue. The guy* [WHSR] *will come up and say we had a breakdown and it's not our fault so we lost two days, but we still keep it* [production target] *at 500 square metres ……..then he* [WHSR] *says I* [safety manager] *must go and convince the management to make the target 450, the guy* [manager] *is not going to be able to do that because that's in the system, then they* [workers] *blame the safety rep that they asked for the help and nothing happens."* (Safety manager gold)

When asked if the WHSR puts the interests of workers first, production workers said they did, but were emphatic that the role of WHSR was rendered impossible by the prioritisation of production over safety. Not being listened to by supervisors was the major obstacle which

was then compounded by what workers acknowledged to be their lack of power to make changes,

"He doesn't have a say since they don't even listen to him, they don't have power whatsoever." (Production worker gold)

Workers stated that WHSRs were in an unforgiving situation that inevitably ended in conflict, either with supervisors, who must deliver production targets, and/or workers who wanted bonus payments and who were prepared to take short cuts to reach targets. This was amplified in the context of contract workers, who were described by one UHSS as working like *"slaves."* Workers reported that WHSRs who confronted the chasing of production targets over safety were accused of *"sabotage,"* and/or found themselves facing the discrimination of managers. Workers observed that WHSRs would first seek the support of a supervisor before withdrawing workers from a dangerous workplace, in some instances. On the other hand, workers who chased production made it difficult for WHSRs to assert safety rules. "*Sometimes the people* [workers] *don't want to work with you* [WHSR], *because you are sticking to the rules and that's wrong. That's why a lot of people now refuse to be health and safety reps."* (NUM health and safety structure gold)
Overall, the general sentiment of workers was summed up by the statement, that there was, "*no point in having safety reps if no one is going to listen to them,"* (Production worker gold). And that to make a success of the role, an HSR needed to be fearless, *"You must be full of shit, mustn't be scared of anything."* (Production worker platinum). FTHSRs faced similar criticism and were said to lack power,

"He [FTHSR] *came with the mine captain and the shift boss, but they refused to let us leave* [the workplace] *they told us to continue working. He* [FTHSR] *then told us that we have heard it ourselves and we saw that he has no power. If the mine captain and the shift boss tell us to work we have to. Luckily the place collapsed after we had knocked off."* (Production worker gold)

Workers described not understanding the role of the FTHSR, and described them as workplace *"observers."* (Production worker platinum). For some workers, their role was poorly differentiated from those of management,

"*When they* [FTHSRs] *get here they just tell us* [workers] *about production, we end up not knowing where their job starts and ends."* (Production worker gold)

5.4.2.6 HSRs are asking for and are supported by other role-players in their demand for financial incentives

The use of financial incentives in South African mining was first introduced in the 1960s and is a deeply institutionalised practice (Moodie and Ndatshe, 1994). Incentive payments for HSRs were raised by respondents at all sites, but appeared to be paid at two sites only. Although in both cases these payments were not described in the respective collective health and safety agreements. At site 1, gold US$ 17 (exchange rate R12.37 to 1 US$) was paid monthly. Safety management were uncomfortable with this payment being unrelated to performance and it was reported there were penalties if the WHSR log book was incomplete. At site 2, platinum it was stated that 25% of the team leaders' bonus was paid to HSRs, which approximately amounted to the US$17 paid at site 1. At site 3, a quarterly competition was held by safety management between the WHSRs for prizes. At site 4, management had most recently rewarded all workers for safety performance with a gift, and there were no specific benefits for HSRs, although the absence of these were raised by respondents with researchers.

UHSS respondents stated that no payment, or inadequate payment of *"benefit"* money was the second major grievance of WHSRs, alongside the disrespect shown by supervisors. In focus group discussions some workers suggested that small payments were being made to WHSRs of about US$8 but most were unclear about whether these payments were regular, or what the exact amounts were. Workers were not opposed to incentive payments and some believed WHSRs to work hard, given the difficulty of their role, and were deserving of this. Safety management too, saw the advantages of WHSRs being incentivised through direct financial reward (around US$16 a month) or recognised through the award of gifts. UHSS and HSRs stated that US$16 was too small, because WHSRs were under pressure. Organised labour wanted WHSRs paid up to US$80 per month. The UHSS at one site stated that WHSRs were open to bribes by supervisors if not properly remunerated.

Incentives for FTHSRs mainly centred on career prospects towards being a safety officer. FTHSRs in this study had all financially benefited on appointment into the role because of the promotion into a higher pay grade. Once in post, FTHSRs looked to the possibility of being a safety officer and at site 4, one FTHSR was appointed into an acting position of safety officer during the research period. One safety manager supported this and stated that the FTHSR should be on a career path to being a junior safety officer.

5.4.3 Loop 2: Compliance and enforcement

The interactions between role-players in Loop 2 are illustrated in Figure **9**. These were not the daily interactions that were characteristic of the communication between the role-players in Loop 1, but were commonplace interactions, and the role-players were mainly acquainted with each other. These interactions were triggered either by notification from the DMR-MHSI of a visit, or were in the event of a reportable OHS incident. Co-ordination of this communication loop was through senior safety management and notably, in contrast to Loop 1, actively involved the engagement of the UHSS. Production management also interacted directly with the UHSS especially on a specific shaft. The UHSS would escalate issues where necessary to the union branch or regional structure, thus making them a role-player in the compliance and enforcement loop.

Outside of site visits made to the mine by an inspector, respondents reported that UHSS, the union branch/regional structure and management contacted the MHSI. Only one FTHSR reported that he had requested information from an inspector, which in his case did not meet with success. This suggested a weak communication link between FTHSRs and the MHSI (illustrated in Figure 9 by a faint dashed line). The MHSI would in turn, interact directly with the employer through the office of the mine manager with respect to enforcement actions and feedback. Thus another circular set of interactions was established between the FTHSRs, the UHSS, the MHSI, mine management (the employer) and the safety department.

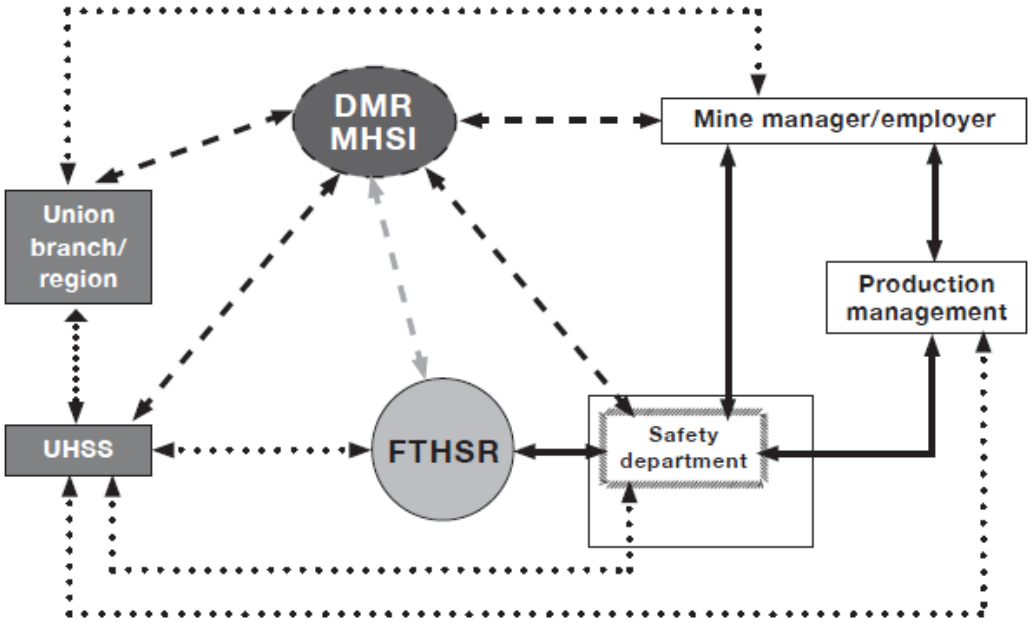


Figure 9: The employer-HSR safety management system, Loop 2: Compliance and enforcement. A schematic diagram of the major interactions between the primary role players.

5.4.3.1 The inspectorate added to HSR experience of pressure

FTHSRs had both a positive and negative experience of the MHSI. Inspectors were helpful and provided an *"eye opener"* on how to deal with hazards. Inspectors also helped with the sanctioning of supervisors. At site 4 FTHSRs welcomed the dismissal of supervisors as a result of the intervention of the MHSI and UHSS described having a *"very good"* relationship with the regional Principal Inspector, which involved sharing ideas and regular phone calls. However, inspectors who arrived on site wanting to see the WHSR and the FTHSR contributed to their difficulties. FTHSRs reported that inspectors pressed them for reasons why they had allowed work to progress in an unsafe workplace, or to provide reasons to keep the mine open given the safety violations, and to state, given these violations, what they will do to improve health and safety performance. De facto, this type of pressure deflected responsibility for OHS transgressions away from the employer, which resonates with the *'creeping responsibilisation,'* I have used to describe the experience of WHSRs (Coulson, 2018).

"He [inspector] *would ask for my opinion on how I see the place and my response would be to say that it is unsafe. He would then ask me again if I don't think that that is safe then why would I allow people to continue working there before he comes there?"* (FTHSR platinum)

Safety management validated this description of the experience of the FTHSR. At site 4 the safety manager described the role of the HSR as *"sensitive"* because he/she must be able to prove to the inspector that he/she had shown the supervisor the hazard. WHSRs were urged to keep log books updated. Where both the supervisor and the WHSR were found by the inspector to have not acted, it was stated that the inspector would issue a Section 54,

"When the inspector arrives, he then scrutinizes that paper by saying; oh… the safety rep has never attached a signature but how come you Mr. [supervisor] *and the safety rep are allowing people to work there and then if the situation is like that, the inspector will give a section 54, he will shut down the mine. In other words the role of the safety rep on a daily basis is a very sensitive one."* (Safety manager platinum)

FTHSRs described feeling scared, intimidated and anxious not to add to the potential conflict between mine management and the inspectorate over enforcement actions and instead sometimes choose to say nothing.

"It was a little bit scary because I didn't want to say something which might cause conflict between us [the mine] and the inspector or that might anger him, so I had to be sure to say something which was correct and so I didn't say anything." (FTHSR platinum)

5.4.3.2 Mine management had an expedient relationship with HSRs

Safety management were of the opinion that senior mine management in general supported HSRs, but in practice theirs was an expedient relationship. One safety manager stated that mine management were supportive of HSRs only in so far as compliance was required, and that once the regulator was out of sight then mine management were clear that the HSR should behave as though he or she is *"part of them,"* (Safety manager platinum). Mine management it was said ignored the reports of representatives until an inspector finds the same faults, (NUM UHSS platinum). However in the event of a section 54 being imposed, management appealed to UHSS for support. UHSS respondents reacted positively to these overtures by management and described the predicament that faced the mine, as "ours" and not just a problem for the employer. "*It is not just mine or management's mistake but ours combined,"* (NUM health and safety structure gold). When faced with the inspectorate, both UHSS and FTHSRs spoke about acting in the best interest of production, to keep the mine operating and saving jobs, in priority to safety. AMCU and NUM did not differ in their stance to the inspectorate and both sided with management in the event of a section 54. One union representative qualified this stance by making reference to the MHSA Section 23, which gives an individual mineworker and HSRs the right to withdraw from a dangerous

workplace, which it was stated, was there to protect workers, and therefore justified making a stand for production rather than safety, (AMCU health and safety structure gold).

"I speak on behalf of the company, I want to be honest on that because the more the company doesn't do anything, it is the more my futures and my fellow employees' future skates on thin ice because if the company decides that they have had enough and they pack up and leave then we don't have any work anymore." (FTHSR gold)

In fact, the UHSS on occasion, went to extraordinary lengths to avoid a section 54. In one instance, the UHSS described involving the regional chairperson of the union to directly appeal to the MHSI not to close a specific shaft. Another FTHSR described the UHSS appealing to the Principal Inspector, that he or she should be *"lenient"* and that the *"union"* would make sure injuries come to an end (FTHSR platinum).

… the DMR wanted to close it[the shaft]*, we*[UHSS] *asked that they help us as they are the bigger structure[union regional structure]. We asked that the chairperson go to DMR with me, to tell the DMR what is happening at* …[name of]*Shaft and that is why it is still not closed."* (NUM health and safety structure gold)

5.4.3.3 Organised labour held independent criticisms of the inspectorate

Despite standing with management when faced with a section 54, the UHSSs did hold independent criticisms of MHSI. Persistent problems raised on several occasions with inspectors were not resolved. In one instance, inspectors were called three times in one year about dust, *"DMR will just come and write notes, and some will just say fix this, and that, but the problem continues,"* (NUM health and safety structure diamond). It was also felt that the MHSI should take more drastic action against senior production management and the mine manager, such as revoking their tickets/license to work.

Over the last five years, South Africa has been gripped by the scandal of state capture (Martin and Solomon, 2016). At the centre of this is the corrupt relationship, ex-president, Jacob Zuma, had with a family of business men. At site 4, the UHSS alleged that the conduct of the MHSI was very *"very questionable."* And that the regular imposition of section 54s was a covert campaign of the DMR to run down specific companies so that they too can be bought by corrupt parties with links to the president.

"there seems to be this campaign orchestrated by this notorious family [Gupta] … that is influencing even the ruling party [ANC] *to encroach in some of the companies, in making*

sure, that they make them weak through issuing them with section 54s, such that at the end of the day, these companies are unable to see the day, after losing their financial funding from the investors, so that they can come in and buy these companies." (NUM health and safety structure platinum)

5.5 Discussion

The sociologist Luhmann (Luhmann, 1995) used the early observations of biological scientists about autopoietic (or self-referencing – or literally the process of a system that produces "itself from itself") to describe social arrangements that had similarities, which he named socio-autopoietic systems. An autopoietic system is closed with reference to how it is organised, but not isolated from the broader environment with which it will engage (also referred to as enaction). In sociology this boundary is understood in terms of complexity. The internal organisation of the autopoietic system reduces complexity in comparison with the external environment where lies infinite complexity (Mele et al., 2010). Another consideration is whether social systems are action or communication driven, about which Luhmann expressed a preference for understanding socio-autopoietic systems through communication (Vanderstraeten, 2012). The application of observations about biology, to sociology, is highly contested within sociology, because social systems will of necessity need to register certain qualities to comply with autopoiesis. On the other hand, a less rigid application can be helpful to describe social systems that appear to have similarities that are at minimum metaphorical, if not based in science (Mingers, 2002). It is this latter application that has relevance here. The paper demonstrates, not that the employer/HSR safety management system was self-referencing, but that by using socio-autopoiesis as a metaphor, there was in practice, a circular or closed system of communication (Loops 1 and 2) in relation to the management of safety that was driven by the communication between the role-players and that de facto simplifies the complexity associated with the social relations of production. The contention is that the circular/closed loops of communication in which HSRs are implicated act against the engagement of autonomous worker representatives at a more strategic level with OHS by simplifying a set of interactions with key role-players that fundamentally keep HSRs disengaged from the context of aggressive production politics.

5.5.1 The broader context

In advanced economies where pluralist arrangements between the employer and employee representatives for OHS are well established, the global neoliberal economic context is attributed with threatening these, by strengthening employer unitarism or dominance.

Primarily, because of weakened union density (decollectivising industrial relations) and because of an escalation of contract labour (Gunningham, 2008; James and Walters, 2002; Johnstone et al., 2005). Declining over two decades, estimates for union density are now, on average, below 20% across all Organisation for Economic Co-operation (OECD) countries (Ibsen and Tapia, 2017: 175), although, not so in South African mining, where union membership is estimated at 80% (Bhorat et al., 2014: 5). Contract workers because of their precarious position in the workplace worldwide are repeatedly shown in studies to be vulnerable to poor OHS outcomes (Gunningham, 2008; Quinlan, 2013). Certainly the significant rise of outsourced contract labour on platinum mines in South Africa contributes to a non-compliant safety culture; either because contractors consented to work in some of the most insecure areas, or because they lacked equipment for the job, and because contract workers who worked for labour brokers, who supplied contract labour against production agreements, reported injuries were hidden in the interest of keeping the mine open and producing (Forrest, 2015).

In hazardous industry, the global growth in the popularity of employer-led behaviour-based safety (BBS) approaches has also significantly challenged autonomous representative arrangements too. BBS substitutes consultation with autonomous worker representatives, for management-worker engagement to secure worker compliance with employer standards and procedure (Gunningham and Sinclair, 2009; Quinlan, 2014; Walters, Quinlan et al., 2016a). The evaluation of the employer-led South African, sector-wide Mine Occupational Safety and Health (MOSH) Leading Practice Adoption System found that employers by-passed the structures for worker representation in favour of surveys to assess worker 'mental models,' which is an example of the BBS approach (Hermanus et al., 2015). Thus the outlook for HSRs on South African mines against the bleak global picture is therefore mixed, whilst contract labour and BBS have a foothold in South Africa, a strong trade union presence might have been expected to bolster representation against a slide to employer unitarism.

South Africa is an upper-middle income country with one of the highest Gini-coefficients in the world (Anand et al., 2016). Unemployment for the general population stands at 26,7%, and is higher for those who are younger, 33.4% for those aged between 25-33 years (Statistics South Africa, 2018: 23). Jobs are at a premium and there is limited growth in the South African economy. Mining has struggled with significant restructuring in a period of commodity downturn, that has seen 69 000 mining jobs lost between 2012-16 (Chamber of Mines of South Africa, 2017: 9), about which government has been sharply critical (Duval

Smith, 2013). Section 54s have also contributed to an escalation of tension in the sector, with industry arguing it lost up to R4.8 billion of revenue in 2015 alone (Chamber of Mines of South Africa, 2017: 41). Overall, the general squeeze on jobs and the increased precariousness of work in the sector forefront keeping even marginal business open, and there is little latitude in relation to production.

Production politics is aggressive in South Africa and all respondents in this study said production was at times prioritised over safety. Mineworkers face the brunt of this. Against this backdrop improvements to mineworker remuneration have been hard won (in 2014, AMCU led the longest mining strike in South African history (Sinwell, 2015)), and production bonuses are still a component of mineworker pay. Median monthly wages for mineworkers today (R7500 or US$ 606 (exchange rate R12,37 to 1 US$)) (Chamber of Mines South Africa, 2017a: 15) are above that of construction and manufacturing workers, but not those of utility workers. Estimates are that for many mineworkers, approximately 60% of their final pay package is basic pay, and 40% is primarily a housing allowance and an incentivised production bonus (Makgetla and Levin, 2016: 41). The proliferation of contract labour on mines adds to this complexity. Forrest (2015) describes how on platinum mines there are wide disparities between the payment structures of workers doing the same job of a rock drill operator with contract workers almost always being paid less. On gold mines, the improvised strategies of mineworkers and frontline supervisors to overcome common obstacles to the production process, to meet production targets (termed 'planisa'), is a well-documented case of the supremacy of these targets in the contemporary mining workplace (Phakathi, 2018).

5.5.2 The simplification, Loops 1 and 2

In neither loop did worker representatives present an effective challenge to production imperatives, although OHS is fundamentally the product of the process of production. Instead far from this, management relied on HSRs (in Loop 1) to operationalise their OHS management system, either by communicating safety information, or by bringing OHS transgressions to their attention. In Loop 2 management relied on HSRs to prioritise production when faced with the enforcement action (section 54) of the regulator. HSRs and the UHSS provided no evidence that organised labour would delay a decision on the lifting of a section 54 in the interests of safety, despite the MHSI reporting that a fifth of all such notices were because of poor supervision (such as the target chasing described by respondents in this study) (Department of Mineral Resources, 2017: 26). Neither did

organised labour describe arguing for systemic improvements to OHS as a consequence of the serious actions taken by the inspectorate.

HSRs were co-opted by the employer despite knowing that their back-up and power rested in organised labour, and not with the safety department. This is far from the regulatory ideal in which both the employer and the regulator recognise a system of autonomous worker representatives (Walters, 2006; Walters and Nichols, 2007). The payment of financial incentives by the employer to worker elected HSRs is possibly a unique manifestation of co-option, with respect to the global picture of employer dominance in arrangements for HSRs. Surprisingly all respondents including organised labour thought it fair that the employer pay incentives to WHSRs to underpin the management dominated system, despite there being no requirement for HSRs to be paid these under the MHSA, and no mention of these in the site specific health and safety collective agreements.

5.5.3 Employer dominance

Employer or management dominance of HSRs is not new in South Africa and was found prior to the introduction of the MHSA. The Machinery and Occupational Safety Act of 1983 (MOSA) permitted the employer to select worker representatives (Albertyn, 1983). Described as *'managerial regulation'*, Baker (as cited in Zwi et al., 1988) described these appointments as *"another pair of eyes to assist the employer,"* which echoes wording used by safety management in this study. Although MOSA did not apply to the mining industry, new mining regulations (Republic of South Africa, 1988) under the Mines and Works Act (Republic of South Africa, 1956) followed suit and were seen as a state counter to the demands of NUM at the time for independent, worker selected stewards, equivalent to the UHSS of today. These regulations allowed for management appointed safety officers, as well as, management appointed worker representatives. Each mine with more than 300 employees had to employ a full-time safety officer. Critics of this argued that the intention behind the new regulations was to transfer the state safety inspection system to mining houses about which even the government mining engineer had doubts over management's capacity to regulate itself, *"(U)nless (the safety officer) is supported by the general manager, who will hopefully be enlightened enough to see that the two roles of safety and production are complimentary and not opposed, he will be ineffective and the scheme will be unsuccessful."* (Bachman et al., 1989: 361).

Safety officers conducted inspections, ensured compliance with OHS standards, ensured training for workers, recorded accidents and held inquiries into reportable incidents. While representatives reported hazards they identified, or were reported to them, to their

supervisors. They also accompanied safety officers when they undertook inspections. The role of HSRs, in Loop 1 mimics the 1988 regulations precisely because HSRs report into management, in spite of them being selected by workers. NUM's view was that the supervision of safety under the 1988 regulations was like giving *"an alcoholic the keys to the drinks cabinet."* (Bachman et al., 1989:361). Today organised labour wants HSRs to be paid incentives to fulfil this role for management, which represents a huge shift in the position labour, and/or the disregard of the employer of an independent space for labour. Given that the mining regulations (Republic of South Africa, 1988) were introduced almost ten years prior to the introduction of the MHSA and had already laid the basis for worker representatives directed by management, it would appear that management's role has not meaningfully shifted in the proceeding thirty years.

In Queensland where union density on coal mines was similar to South Africa it was found representatives operated effectively despite the unitary intentions of management (Walters, Quinlan et al., 2016a; Walters, Quinlan, et al., 2016b). The arrangements for the appointment of these representatives, their experience and qualifications and powers (especially with respect to the issuing of a suspension order) are markedly different to those of South African representatives and it is not the purpose of this paper to detail this. Rather it is to highlight that the conditions on South African mines are not entirely unique. Worker representation can find a powerful expression despite a context that favours employer dominance. It is the capacity of HSRs to act autonomously without reference to management that is exceptionally compromised in the South African context, which given the very high union density is an anomaly.

5.5.4 Organised labour post-apartheid

Although the arrangements between the employer appointees and HSRs are associated with the self-regulation fashioned in the UK in the 1970s (Robens, 1972), this, is a widely held misnomer, and arrangements for worker representation in OHS rely on the strength of trade unions (Nichols et al., 2007). South Africa is no exception to this (Stewart and Nite, 2017). When the National Union of Mineworkers (NUM) commissioned a report into mine safety towards the end of the apartheid years, mine fatalities stood at approximately 600 per annum (Leger, 1985). The then NUM General Secretary, Cyril Ramaphosa stated;

"In the mines, health and safety is the top priority –it is more important than wages. You've got to be alive and uninjured to earn the wages. Therefore to us, health and safety comes first." (Zwi et al., 1988: 700)

HSRs appointed under the MHSA were introduced onto South African mines as NUM grappled with the transition into democracy and exposure to the globalised neoliberal labour market. The social movement unionism of the anti-apartheid struggle, with its simultaneous focus on workplace and community struggles faltered. Instead rank and file membership was poorly serviced and an internal representation crisis emerged for labour (Webster and Buhlungu, 2004). OHS once central to the mobilisation of NUM in the 1980s most likely suffered because of this (Botiveau, 2017). Shop stewards previously the custodians of OHS struggles were aspirant. Either personally careerist (working on surface and later in jobs for the human resources department (Moodie, 2016)) or, entrepreneurial (assisting the employer to recruit a new cadre of black supervisors (Buhlungu and Bezuidenhout, 2008)). A consequent brain drain, meant labour almost certainly lost some of its most experienced shop stewards and OHS activists at this time. The subsequent disillusionment, division and a breakdown of trust between membership and leadership within NUM resulted in a struggle for labour territory. The emergence of the more militant, AMCU in the last decade is an expression of this.

5.5.5 The tripartite project

The co-option of HSRs by management points to weaknesses in the tripartism at the centre of the MHSA, which determines the arrangements between employers, workers and the regulator. Globally the arrangements for HSRs are associated with positive OHS outcomes (Nichols et al., 2007; Walters, Quinlan, et al., 2016b; Walters and Nichols, 2007) and the overall positive safety performance of the mining sector post-apartheid would appear to lend weight to this. In support of this a South African study of the right to leave a dangerous workplace (MHSA section 23) found workers were more likely to leave a dangerous workplace under instruction of an HSR than of their own volition (Coulson et al., 2019). However weaknesses in the tripartite project have emerged at the national level, which demands a closer examination of what is contributing to the reported OHS improvements. At the national level, the statutory, tripartite Mine Health and Safety Council (required under the MHSA) under the leadership of the MHSI has confronted OHS risk within the parameters of existing mining approaches and has shied away from a more strategic examination of new types of efficiencies, technology and method change that significantly shift the production process and OHS risk (Hermanus et al., 2019). This study found this to be mirrored at the mine site level too. UHSS offered no critique of management production practices when faced with a Section 54 imposed by the MHSI. Neither has the Council provided any critical analysis of what may be contributing to the reported improvements outside OHS practice,

such as that provided by Hermanus et al who argue that it is the contraction of the gold sector that is making for substantive improvements (Hermanus et al., 2019). This paper speaks to a schism in the pluralist arrangements between the employer and worker representatives for OHS at the mine operation which would suggest that the potential contribution of HSRs to OHS outcomes has been sullied.

5.6 Conclusion

The systems thinking approach (socio-autopoiesis (Luhmann, 1995)) provided a valuable analytical approach to understand the experiences of HSRs in a complex industrial workplace. It mapped concrete commonplace interactions between key role-players rather than presuming a pre-determined set of relations. This provided a unique insight into the compromised position of HSRs and may as an approach hold value for other studies of worker representatives too.

The presence of high union density on South African mines has not held back the tide of employer unitarism in OHS. Although there is a statutory commitment to pluralist arrangements, in practice the safety management system is predominantly a unitary system underpinned increasingly by employer incentives. HSRs formed membership of two closed loops of communication that were dominated by management and that ensured there was no effective challenge to production imperatives. HSRs assisted safety management to manage the worst excesses of the prioritisation of production over safety in the workplace and sided with the employer to keep a mine open and producing when faced with harsh enforcement mechanisms of the regulator. The introduction of the MHSA post-apartheid has not shifted the stance of the employer to worker representation away from managerial representation found under Mining Regulations (1988) in place prior to the introduction of the MHSA. Although the reasons for this are unclear, the NUM faced challenges in the transition to democracy and a schism in the OHS pluralist project on South African mines has emerged.

Chapter 6

6. Paper 3: Worker health and safety representatives on South African mines, a compassionate voice in the face of employer dominance and health complexity

6.1 Abstract

There is a triple disease burden on South African mines; occupational disease, communicable disease and non-communicable disease (NCD) are all of concern. The Mine Health and Safety Act No 29 of 1996 introduced for the first time worker elected health and safety representatives (HSRs). Globally, although arrangements for HSRs are associated with better health and safety outcomes, employers increasingly dominate their activities. In-depth interviews (n=40) were conducted with HSRs (n=10) and OHS practitioners (n=15) on four underground mines (gold, platinum and diamond) over 12 to 18 months in 2015-16, to understand how HSRs engaged with health issues, and how the employer responded. Activities across the triple disease burden were categorized as either employer or worker-led activities. While the employer supported HSRs working under their instruction, HSRs faced impediments to their statutory representative role. Employers took advantage of gaps in regulatory guidance. As a consequence of health complexity, and employer dominance, where HSRs acted independently, it was as the compassionate voice to workers. HSRs in middle-income countries take on a meaningfully different role to their counterparts in highly-industrialised nations. There are implications, for both regulatory policy and trade union strategy.

6.2 Introduction

The occupational health of mineworkers has received attention globally. A recent scoping review of health in the extractive sector found that research has been dominated by quantitative health impact studies exploring direct toxic exposures experienced by workers (Brisbos et al., 2019). The complex social arrangements associated with health which affect workers, was identified as a significant research gap. Although the scoping review included a substantial number of studies from South Africa, few studies described health interventions (Brisbos et al., 2019). There is also scant attention paid to the statutory health interventions that support mineworker representation in middle- and low- income countries. Despite the progressive precedent set for worker representation in Africa, under the post-apartheid South African Mine Health and Safety Act (MHSA) No 29 of 1996 as amended (Republic of South Africa, 1996), very little has been written about representatives experience of this, and the relationship to health outcomes.

Worker representation in occupational health in many mining contexts is a statutory health intervention. While it is very poorly described and understood in South Africa, arrangements for employee participation in occupational health and safety (OHS) through employee elected health and safety representatives (HSRs) are well established and defined in highly-industrialised mining nations, found in Europe, New Zealand, Canada and Australia (Frick, 2013; Garcia et al., 2009; Harris et al., 2012; Hovden et al., 2008; Lewchuk, 2013; Walters, Quinlan, et al., 2016a, 2016b). International Labour Organization (ILO) Convention 176 Safety and Health in Mining, to which South Africa is a signatory, makes provision for HSRs too (ILO, 1995). In practice, worker elected or selected HSRs, and a joint employer/employee health and safety committee are established in the mine workplace as a mechanism for employer consultation with workers and, in some cases, collective decision making concerning OHS. Although the origins of these pluralist arrangements are frequently referenced to important government commissions held in the UK and in Canada in the 1970s (Robens (Robens, 1972) and Ham (Ham, 1976) respectively), the arrangements were, in fact, a product of much longer labour struggles for improvements to OHS (Storey, 2005; Walters, 1996a). An outcome of this labour history was the *"preferred model"* for worker representation which ensured that trade union elected representatives formed joint arrangements with the employer. In this model HSRs are members of trade unions, who report into trade union structures and thus are directly associated with the worker collectivism underpinning the arrangements for labour relations (Nichols and Walters, 2009). In unionised workplaces in Europe, Australia and Canada, HSRs remain union appointments (Menéndez et al., 2008; Walters et al., 2018b; Walters, Johnstone, et al., 2016). Similarly in South Africa, HSRs are appointed as instructed by the mine health and safety agreement signed by both the recognised trade unions on-site and the employer, as a requirement of the MHSA (Chapter 3).

Globally, it is established that the presence of joint arrangements between the employer and trade unions facilitated through the appointment HSRs is associated with positive OHS outcomes (Menéndez et al., 2008; Walters, 2006). In South Africa, a study of the implementation of the right to refuse dangerous work provided some evidence of the value of HSRs for OHS, because workers were more likely to withdraw from a hazardous workplace under the instruction of a HSR, than of their own volition (Coulson et al., 2019). In the last decade, however, there is mounting concern that the neoliberalism of the globalised workplace threatens these arrangements, because of the growing dominance of the employer over the activities of HSRs, and the weakness of trade unions (Gunningham, 2008;

James and Walters, 2002; Johnstone et al., 2005). Studies show that increasingly HSRs undertake activities that are in the interest of the smooth running of the employer OHS management system, such as supporting behaviour-based safety approaches, rather than consulting with the employer about the OHS concerns of workers as intended under relevant legislation (Hovden et al., 2008; Nichols and Walters, 2009; Walters and Wadsworth, 2016; Wright and Spaven, 1999). Diminished labour presence in the workplace has been a significant contributor to employer dominance of the arrangements for worker representatives because increasingly HSRs operate autonomously of any collective power base (Loudoun and Walters, 2009).

Given the challenge to the "*preferred model,"* HSRs globally have adapted their strategies to remain effective in their role and are therefore not solely reliant on the muscle of trade unions to assert themselves in the face of the employer. Hall et al. (2006 and 2016) argued that the mobilization of OHS knowledge was an effective adaptation to the decline of worker power related to the demise of organised labour. They found that HSRs who strategically applied technical and/or legal information that was sourced independently of the employer remained effective. These HSRs, described as *"knowledge activists,"* were distinguished by their commitment to autonomously seek information outside of the employer and their tactical use of information in their engagement of the employer. A New Zealand study found HSRs who had technical expertise could more readily engage at a strategic level with the employer because of their "*specialist craft based expertise"* (Harris et al., 2012: 492). Walters, Johnstone et al. (2016) found HSRs, although unionised on Australian coal mines, operated in a hostile industrial relations context and maintained their highly effective contribution to OHS performance only by careful application and detailed knowledge of the law. Thus neoliberal realities have meant HSRs cannot solely rely on the collective power base central to the *"preferred model,"* but must adapt if their role is to have meaning. The application of technical and/or legal knowledge by HSRs is the leading example of this.

In contrast to other global contexts, where diminished trade union density (estimated around 20% (Ibsen and Tapia, 2017)) is argued to have created the conditions for employer dominance of HSRs, on South African mines union density is high, at 80% (Bhorat et al., 2014). However, this has not held back employer dominance. In South Africa, part-time or workplace HSRs on underground mines, working in localized workplaces, or HSRs addressing safety related issues, were found to take on the responsibilities and perspectives of the employer (Coulson, 2018; Coulson and Christofides, 2019). For example, workplace

representatives signed off on daily risk assessments to support safe production, especially at the start of a shift. Partiality towards management interests in the implementation of the right to refuse dangerous work on South African mines has also been reported (Coulson et al., 2019). We have argued that the extent to which the South African mine employer has dominated the safety activities of HSRs seems unprecedented (Coulson and Christofides, 2019). What is not known is whether employer dominance extends to activities undertaken by HSRs in the interests of health and if adaptations, such as the tactical use of information by HSRs, may have found expression in the South African mining context.

Employer dominance is not the only challenge that HSRs in South Africa may face when it comes to health. Health on South African mines has grown in complexity since the introduction of the MHSA under which worker HSRs are appointed. Under the MHSA, the definition of the word *"health"* covers all matters related *to "occupational health at mines"* (MHSA Section 102). Two successive, sector-wide voluntary 10 year OHS milestones, set in 2003, and again in 2014 (these are complementary to the MHSA), aimed to achieve significant improvements for priority occupational disease, namely occupational lung disease (especially silicosis associated with gold mining) and noise induced hearing loss (NIHL) (refer to Table 1). Progress towards these targets has been slow, and twenty years on from the promulgation of the Act, the regulator has only now reported improvements (Department of Mineral Resources, 2017). One contributory factor is the communicable disease burdens of human immuno-deficiency virus (HIV) and tuberculosis (TB) that have escalated rapidly in the period since the promulgation of the MHSA. The inclusion of HIV and TB prevalence and incidence targets as part of the 2014 OHS milestones is tangible evidence of this (Refer to Table **12**). The synergistic disease multiplier of silicosis, HIV and TB on South African gold mines has over the last two decades added enormously to the disease burden on mines (Campbell and Williams, 1999; Murray et al., 2011; Rees et al., 2010). Presently HIV and TB remain higher in all mining communities than in the general population (PHRU, 2017). The government National Strategic Plan for HIV, STI and TB 2016-22 identifies mineworkers as both a key and vulnerable population for HIV and TB programming (South African National AIDS Council, 2017). Non-communicable disease (NCD) in the mining workplace has grown in significance too. Estimates for NCD in the general population are that diabetes and hypertension are of mounting concern (Mayosi et al., 2009). The Minerals Council of South Africa and the Department of Mineral Resources Mine Health and Safety Inspectorate (DMR-MHSI) have both reported increased incapacitation of mineworkers because of NCDs (Balfour-Kaipa, 2016; Department of Mineral Resources, 2017). Thus mineworkers face a

triple disease burden on South African mines, characterized by occupational disease, communicable disease and the emergence of NCD.

Table 12: Mine Health and Safety Council (MHSC) OH milestones 2014-2024 for silicosis, NIHL and HIV and TB (Mine Health and Safety Council, 2015).

Milestones
Occupational health: Elimination of respiratory diseases
To eliminate silicosis: By December 2024, 95% of all exposure measurement results will be below the milestone level for respirable crystalline silica of 0.05mg/m^3 Using present diagnostic techniques, no new cases of silicosis will occur amongst previously unexposed individuals
Occupational health: Elimination of NIHL:
Through the quietening of equipment: By December 2024 the total operational or process noise emitted by any equipment must not exceed a milestone sound pressure level of 107 dB(A).
For the individual: By December 2016, no employee's Standard Threshold Shift (STS) will exceed 25 dB from the baseline when averaged at 2000, 3000 and 4000 Hz in one or both ears.
Prevention of TB and HIV/AIDS
Reduction of HIV & AIDS and new TB infections By December 2024 the TB incidence rate should be at or below the highest of either • The national TB incidence rate or • Reduction of new infections in line with the National Strategic Plan (NSP) • 100% of employees should be offered HIV counselling and testing (HCT) annually with all eligible employees linked to an ART programme as per the NSP, and • Promote access to prevention services on TB and HIV & AIDS treatment to families and immediate communities of affected employees

Figure **10** summarises the occupational health arrangements for HSRs and employer OHS representatives on large mines. The arrangements for HSRs are determined by the mine health and safety collective agreement. Two types of HSRs are elected by workers under the MHSA. Full-time HSRs (Section 26) exercise their powers across the whole mine site, and workplace (part-time) HSRs (Section 29 (1)) who share the same powers, but for a designated workplace (Section 25(1)) only. Together they make-up a two tier structure for worker representation. There are many more workplace HSRs than full-time HSRs, and no direct line of communication between them (as shown in Figure 10 by a broken line).

Part-time/workplace HSRs have been found on a daily basis to facilitate the response of production teams to co-workers who were unwell and/or grappling with emotional distress, which appeared indicative of a high disease burden beyond that associated with occupational disease (Coulson and Christofides, 2019). What is not known is whether HSRs

who work in a full-time capacity across the whole mine site extend their activities beyond their statutory role in occupational health too. This paper therefore considers the role of full-time HSRs only.

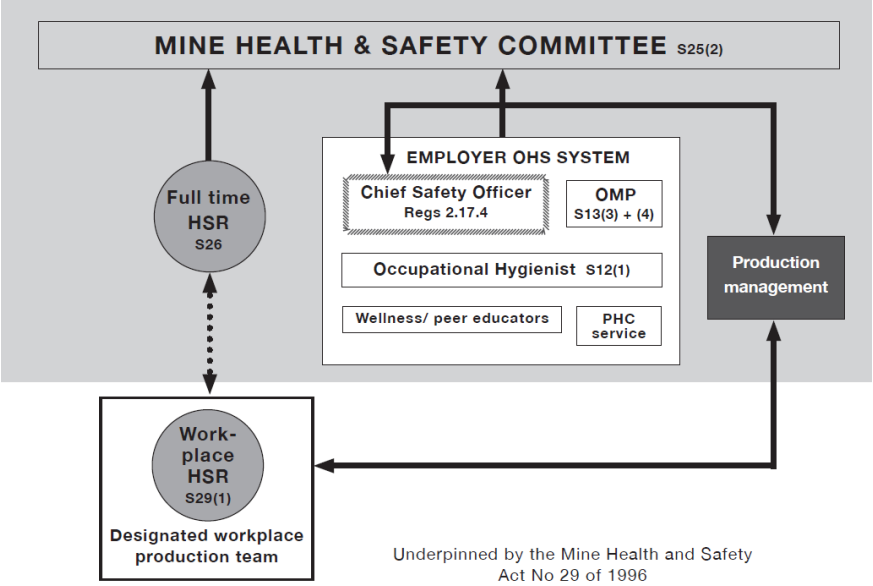


Figure 10: Occupational health (OH) arrangements for HSRs and employer representatives on large mines.

On election by employees, a full-time HSR relinquishes his or her job of employment for the period of appointment (usually 3 years). Between two and four full-time HSRs are commonly appointed per shaft. The rights and powers of a full-time HSR are in keeping with international and ILO precedents and include the right to represent workers on all matters related to OHS, to conduct workplace inspections and consult with the employer and the regulator (Section 30) (Refer to Table **13**). All HSRs are protected from discrimination in their role (Section 83).

Table 13: Section 30 rights and powers of HSRs under the MHSA No 29 of 1996 as amended.

Section of the MHSA	Description
Chapter 3:	
Section 30	Rights and powers of representatives: • Represent employees on all aspects of health and safety • Direct any employee to leave any working place if circumstances arise at the working place • Identify potential hazards and risks to health and safety • Make representation or recommendation to the employer or to a health and safety committee on any matter affecting the health and safety of employees • Inspect any relevant document which must be kept in terms of the MHSA • Request relevant information from an inspector • With the approval of the employer, be assisted by or consult an adviser or technical expert • Attend any meeting of a health and safety committee • Request an inspector to conduct an investigation • Participate in consultations on health and safety with the employer or an inspector • Participate in any health and safety inspection and in any internal health and safety audit • Inspect working places concerning health and safety • Investigate complaints by any employee relating to health and safety • Examine the causes of accidents in collabouration with the employer • Visit the site of an accident • Co-operate with the employer in the conducting of investigations and participate in inquiries • Perform functions agreed by the health and safety committee; or prescribed. NB. The rights and powers apply to health and safety representatives only in respect of the working places for which they are responsible

Statutory appointments under the MHSA frame the employer OHS management system too. The employer is required to appoint the services of an occupational medical practitioner (OMP) (Section 13 (3) & (4)), an occupational hygienist (Section 12(1)) and a chief safety officer (Minerals Act regulation 2.17.4). Although not a requirement of the MHSA, primary health care (PHC) services are commonly found on large mines; including screening and treatment for HIV and TB, diabetes, and hypertension (including in some instances a peer education service). Social workers (a non-statutory position) provide support/wellness services to mineworkers for personal problems, for example for stress and substance use.

HSRs and employer representatives participate at the joint employer/employee mine health and safety committee which has similar powers to those granted to HSRs (Section 36). This statutory body (Section 25(2)) is weighted in favour of employee representatives with at minimum four employee representatives (selected from amongst the HSRs) and employer representatives equal to, or less than, the number of employee representatives (Section 34(2)(b)). Employer representatives on the committee can be expected to include those

appointed into mandatory positions as per the MHSA, and individuals providing PHC and/or wellness services.

This paper explores several questions. Firstly, given the statutory role of HSRs under the MHSA is limited to occupational health, do full-time HSRs in practice respond to the full spectrum of health issues on South African mines? Secondly, is there evidence of employer dominance over the activities of full-time HSRs related to health, and how does the employer exert this dominance? And thirdly, what adaptations to the role of full-time HSRs are emerging given the complexity of health and/or in the event of employer dominance?

6.3 Methods

Descriptive case studies (Yin, 2014) were conducted at four underground mine sites between February 2015 and December 2016 to explore the practice of HSRs. The mine sites included two global senior mining companies and, two intermediate mining companies, (ICMM, 2012) all were underground operations with > 500 employees/workers on site including gold (1 mine), platinum (2 mines) and diamond (1 mine). All mines had appointed full-time HSRs and had signed health and safety collective agreements.

Table **14** summarizes data collection at 4 sites. It outlines the number of participants, as well as their job category for each of the case study sites. In total, in-depth interviews (n=40) of 60 minutes or more, using semi-structured guides, with full-time HSRs (n=10) and employer OHS practitioners (n=15) were conducted over 12-18 months. All interviews were on-site conducted in either English or a vernacular language. All interviews were transcribed. In-depth interviews (n=25) were conducted with full-time HSRs who were interviewed up to four times over a maximum period of 18 months, each interview covering different aspects of their role as it relates to health (refer to Table **15**). In total, 4 of the 10 full-time HSRs were interviewed 4 times. Reasons for attrition in repeat interviews included the withdrawal of permission for researchers to be on site (site 3), 1 full-time HSR died and was replaced by a new respondent (site 4), other full-time HSRs were enrolled into the study because of new elections (site 3) or respondents were not available for interview on the day of the research visit (site 2).

Table 14: Number of study participants and data collection methods at 4 mine sites.

Case study sites	# respondent on Site 1 Gold	# respondent Site 2 Platinum	# respondent on Site 3 Diamond	# respondent on Site 4 Platinum	Total # respondents	Total # interviews on site
Start date	Feb-15	Jun-15	Mar-15	Jul-15		
End date	Feb-16	Dec-16	April-16	Sept-16		
Employer representatives	-	-	-	-	-	-
Senior OHS manager	1	-	1	1	3	3
Chief safety officer	-	1	-	-	1	1
Management coordinator HSRs	-	-	-	1	1	1
OMP	1	1		1	2*	2
OH/PHC Nurse	1		1		2	2
Occupational hygienist	1	1	1	1	4	4
Coordinator peer education/ Social worker	1	-	-	1	2	2
Totals	6	3	3	5	15	15
HSRs						
Full-time HSRs	2	2	3***	3**	10	25
Non-participant observation at mine health & safety committee	1	1	-	-	-	2

*1 OMP serviced both sites 2 and 4 **1 full-time HSR died during the course of the research (not an accident), ***2 new full-time HSRs were elected towards the end of the research period.

In-depth interviews with employer representatives including the occupational medicine specialist, nurse, occupational hygienist, senior safety management, management coordinator of HSRs (site 4 only) and coordinator of peer education/social worker explored their engagement with full-time HSRs. Observations of health and safety committee meetings were conducted at sites 1 and 2. Permission for observation was not granted at site 3. Health and safety committee meetings were not proceeding at site 4 at the time of the research/fieldwork.

Table 15: The sequence and focus of four interviews conducted with full-time HSRs.

Interview sequence	Focus of interview
Interview 1	Selection, preparation & understanding of their role
Interview 2	Day-to-day activities with a focus on the day before the interview
Interview 3	Role & understanding of issues related to health
Interview 4	Engagement with organised labour

Ethics clearance was provided by the Human Research Ethics Committee (HREC)-Medical, University of Witwatersrand, Clearance Certificate No. M140701. Participation in the study was voluntary and with informed consent. The analysis took the form of cross case synthesis because the data told a consistent story across all four sites (Yin, 2014). Transcribed data was thematically analyzed using Max QDA 12 using deductive and inductive codes. Two experienced qualitative researchers met to determine interrater reliability and to check for consensus and consistency.

In this paper, we refer to the occupational medicine specialist, occupational hygienist and nurse as mine health professionals; occupational medicine specialist and nurse as mine medical staff; and all appointments including statutory safety appointments and mine health professionals are collectively referred to as employer representatives.

6.4 Results

The results showed that full-time HSRs were involved in activities across all three disease burdens. Respondents narrated their role in health through descriptions that described occupational health, as well as communicable and NCDs. Concerns about occupational health included silicosis, NIHL, blasting fumes, heat exhaustion, eye problems, fatigue, skin disease, personal hygiene, pests and psychosocial issues such as stress. Communicable diseases included HIV and TB; and NCD, hypertension, diabetes and personal risk factors, such as the use of alcohol, cannabis and smoking.

Full-time HSRs across the four sites undertook both employer and worker-led activities for health (Refer to Table **16**). Activities categorized as employer-led were undertaken by full-time HSRs under the instruction of safety management. Although not a requirement of the MHSA, all full-time HSRs reported to the safety department, which facilitated employer access to them. Employer-led activities included participation in employer workplace hazard identification, the reinforcement of OHS procedure relevant to occupational health (including compliance with the use of personal protective equipment (PPE)); and communicable disease and NCD health promotion, such as giving educational talks and advice. Activities categorized as worker-led were worker initiated, and included the representation of individual and collective concerns to employer representatives, attendance at the mine health and safety committee and HSR-led care and support activities. Each of these activities is discussed under headings that correlate with those used in Table **16**.

Table 16: Employer and worker-led activities of full-time HSRs.

	Employer-led activities – acting under employer instructions	**Worker- led activities** – acting on worker initiated concerns
Activities	• Hazard identification • Compliance with OHS procedure and PPE use • HIV, TB and NCD health promotion activities	• Raising worker OHS complaints with employer representatives • Attendance at the mine health and safety committee • Assisting individual worker requests for representation in meetings with supervisors • Health promotion, care and support activities

6.4.1 Employer-led activities

Whilst the MHSA provided the architecture for representation, legislation had not translated to the enactment of a role for HSRs in health that was autonomous of the employer. This was despite the role of HSRs in this study being underpinned by a signed health and safety collective agreement at all sites. Not one full-time HSR in this study resisted reporting in to the employer safety department, or saw any limitation with this, with respect to their role. Full-time HSRs demonstrated no appreciation of the effective functioning of HSRs found in other contexts where HSRs are directly supported by trade unions, such as on Queensland coal mines, in Australia (Walters, Johnstone, et al., 2016). Neither did they question their limited access to mine health professionals.

6.4.1.1 Hazard identification

The identification of potential hazards and risks through inspections conducted independently of the employer is an HSR function (Section 30 and 30(5)A of the MHSA), but HSRs lacked instruments and training to take exposure readings of common hazards such as dust, noise and heat. This was a common complaint of full-time HSRs. Instruments were issued to supervisors and production management only. Contrary to their autonomous role under law, full-time HSRs supported the inspection program of the safety department and relied on the safety department's checklists and sometimes escorted the occupational hygienist when he or she took readings. At site 1, the occupational hygienist described completing inspections in the workplace with full-time HSRs so that they can see that his/her readings are not *"doctored,"* and to keep communication open. The only instance where HSRs were issued with instruments was at site 4, and only then to assist with the preparation of statutory employer investigation reports into NIHL (MHSA Section 11(5)).

"when the guy records now a level of greater than 5%, we have to do an investigation… so he [Full-time HSR] *will go and visit that guy…..He will then interview that guy underground, and now we are getting real value because now he is taking a physical noise measurement at the winch, or at the rock-drill, or whatever he is operating, he is seeing whether the guy is making use of his hearing protection devices,"* (Occupational hygienist platinum site 4)

6.4.1.2 Compliance with OHS procedure

Behaviour-based OHS approaches are commonplace in mining worldwide (Quinlan, 2014; Walters, Quinlan, et al., 2016a) and on South African mines too (Hermanus et al., 2015). These approaches emphasize worker compliance with safety rules rather than more systemic approaches to safety management (Frick, 2011). Full-time HSRs consistently reinforced mine standards for the employer through regular communication with workers, such as the necessity for watering down of areas where people were working, and checked workers for the use of PPE, especially hearing protection devices. This role for full-time HSRs resonated with the role of workplace HSRs who were found to prioritise worker education and communication too (Coulson, 2018).

6.4.1.3 Health promotion activities

Mine medical staff were acutely aware of the challenge presented by communicable and NCD. They felt the HIV and TB reporting requirements (Department of Mineral Resources, n.d.), sector wide milestones for HIV and TB reductions (refer to Table 1) (Mine Health and Safety Council, 2015), and particularly the new guidance for fitness to work (Department of Mineral Resources, 2016a) put medical professionals under pressure to ensure workers did not go underground with undiagnosed disease. They passed on these pressures to the full-time HSRs, by involving them in health promotion activities; in a manner that was reflective of HSR involvement in employer behaviour-based safety approaches.

Respondents also had experience of unmanaged ill-health in the workplace and the consequences for workers who were forced to work when they were not well.

"There was this guy who had heart problems, he was a rigger ……the guy even collapsed here at the mine because of the heart disease because the engineer told him that if he didn't come on the weekend, then never come back again to the mine." (Full-time HSR platinum site 4)

Full-time HSRs, therefore, shared the concern of employer representatives about the necessity for the promotion of health messages related to HIV, TB and NCD, although

education activities associated with HIV and TB were more commonplace. In turn, employer representatives relied on them to fill the communication gap between themselves and workers. The daily workplace safety/toolbox talks were regularly used by full-time HSRs to promote HIV and TB prevention, screening and treatment, alongside workplace OHS standards and procedure. At site 4, condoms were provided at the office of full-time HSRs, reinforcing their role in HIV prevention. Employer representatives were unanimous in their desire for HSRs to be more deeply involved in health promotion, and not just in the workplace but, with community outreach too.

> *"If he checks an oke* [person/guy] *coughing then he* [HSR] *needs to say to them that they need to go for TB screening … they are meeting these guys [mineworkers] every day, and so when he* [HSR] *sees him in a tavern every day, he must say to him please when you are joling* [having fun] *with the chicks* [women] *you need to use a condom."* (OMP platinum sites 2 and 4)

Mine medical staff saw the opportunity for HSRs to play a proactive role in NCD management too, if equipped with the correct information. In their opinion, HSRs could be relied upon to identify workers who were symptomatic, and to enable their timeously referral to the clinic.

6.4.2 Worker-led activities

An earlier study (2007) of the involvement of HSRs on South African gold mines in silicosis education found that HSRs were largely unaware of the advocacy and pro-active role envisaged for them under the MHSA (Mine Health and Safety Council, 2007). This study in part refutes this and shows that full-time HSRs were well aware of their representative role and undertook activities that were worker-led. This suggests that the sector wide training of HSRs in the last decade has helped strengthen HSRs understanding of their representative role (Mining Qualifications Authority, 2015). However, full-time HSRs seemed unaware of the role of the mine health and safety committee to represent workers (MHSA Section 36), including as it relates to health issues facing workers, and as a consequence had a limited understanding of the extent of their advocacy powers under the law.

6.4.2.1 Raising worker OHS complaints

> *"We visit all workplaces if we find anything wrong we go to the person in charge for resolving that matter sit them down and tell them to sort it out within 7 days."* (Full-time HSR gold site 1)

Employer representatives described complaints/concerns being brought to their attention by full-time HSRs. Complaints/concerns were also raised in meetings, mainly at the safety department. At site 2 (diamond), the occupational hygienist described sitting in on meetings of the safety department with full-time HSRs *to 'listen'* to what HSRs had to say. Common complaints raised by full-time HSRs were about excessive exposures (especially dust), about the physical workplace (such as waiting areas that were too exposed and uncomfortable), and difficulties with personal protective equipment. Sometimes complaints originated from workplace HSRs who had no success raising issues with supervisors, which through the full-time HSR, were then brought to the attention of employer representatives (especially the safety department).

Employer representatives described responding to the concerns of HSRs by conducting their own inspections. They were demanding of how concerns should be raised with them, expecting HSRs to be more informed about the nature of the hazard and asking good questions of them that indicated their interest,

> ***"****…..if he* [full-time HSR] *comes and sits down here and just says explain to me a little bit what is dermatitis, for instance, you know that means he's interested, but if he comes here and sits here and says there's dust at forty-five metre level, go sort it out and you say okay how much dust is there? What creates it? And he says I don't know, he doesn't add value."* (Occupational hygienist gold site 1)

The one full-time HSR who met with obvious success sourced information independently of the employer. In this instance an old structure for health care risk waste was replaced with a secured and compliant storage facility for the mine clinic.

> *"…he* [full-time HSR] *gave me the specs* [health care risk waste storage] *and he made me break the old one down and he got the contractor to be paid, he got the authorization and it was built because of him more than anybody else."* (OMP platinum sites 2 and 4)

This example appeared exceptional, and in most cases full-time HSRs were inadequately resourced to access information. Although full-time HSRs were allocated offices, they were provided with no cell phone airtime or access to the internet at any of the sites. Full-time HSRs were also reliant on safety management rather than mine health professionals for information on all health matters including HIV, TB and NCD. Mine medical staff reported that sometimes full-time HSRs would come to their offices asking for more specific technical

information, such as about TB treatment regimens. Mine health professionals were not involved in HSR training and did not know what was taught in the curriculum, but recognised that the role of HSRs would be strengthened if their knowledge was improved. Employer representatives stated full-time HSRs lacked confidence because of their inadequate knowledge.

6.4.2.2 Attendance of the mine health and safety committee meeting

In contravention of the MHSA, the observed health and safety committee meetings at two sites were heavily weighted in favour of the employer. At site 1, one HSR and 13 employer representatives were present. At site 2, three HSRs and 14 employer representatives were present. Both meetings were chaired by the senior safety manager. Full-time HSRs at all sites understood that they should attend the mine health and safety committee meeting. Comments by respondents showed that some types of worker concerns faced less opposition from the employer than others. Those who challenged the production imperative were met with employer hostility. In other cases, employer respondents took a paternalistic stance to worker complaints and felt the role of the committee was to assist HSRs to understand employer perspectives.

> *"My obstacles are that … I am telling the mine overseer that his workers are knocking off late and there is no one paying for their overtime then he might tell me those things which are not nice like it is not my duty to tell him about how his workers work and knock off late." (Full-time HSR platinum site 2)*

> *"The fact that the safety rep is sitting in there* [mine health and safety committee meeting], *they are not getting victimized or shut down, we allow them to talk even if it's something that is not on the agenda,….. sometimes it's difficult from a managers side* [as we managers know] *why it's working, but in their* [HSRs] *world it's not working, so it's our job to make sure they* [HSRs] *see what we also see…" (Safety manager diamond site 3)*

At both the observed mine health and safety committee meetings, it was union shop stewards rather than the full-time HSRs who asked questions of the employer. This stands to reason given full-time HSRs all reported in on a daily basis to the safety department. Employer respondents were unable to identify any example of where a full-time HSR had added value to the mine health and safety committee and described their role as *"passive."*

"Normally they [full-time HSRs] *would just be passengers just sitting there and not voicing out unless someone tries and digs something out of them..."* (Safety manager platinum site 2)

6.4.2.3 Representation of individuals in meetings of supervisors

Full-time HSRs assisted individual workers to raise health related issues with supervisors. Issues were varied and reflected the impact of the triple disease burden, but also the handling of health issues by the employer. For example, issues included the worker who had been denied leave over a long period; the worker who had been stabbed but, didn't have a sick note; the worker with TB, but who was fearful of needing regular time off to collect medication; or workers who were fatigued. The reason behind these representations was ubiquitous; workers felt they would not be understood or listened to. Employer representatives concurred with this when it came to supervisors.

"It can happen that if he [worker] *goes straight to his foreman maybe their communication is not good, and so he thought that if he comes with me* [full-time HSR] *then the foreman will understand what he is saying."* (Full-time HSR platinum site 2)

"I think the thing is that these guys [full-time HSRs] *represent them and they* [workers] *can be listened to unlike if they go by themselves."* (Nurse gold site 1)

6.4.2.4 Health promotion, care and support to workers

Full-time HSRs provided health promotion, care and support to workers about whom they were concerned. Health promotion activities would happen during union mass meetings or at meetings between HSRs and workers.

" Some [workers] *mostly complain about their eyes or chest,….people used to smoke heavily and we used to talk to them when we were having our own meetings on surface with everyone that people must quit smoking because of the dangers related to smoking…"* (Full-time HSR platinum site 4)

Full-time HSRs at all sites regularly visited mineworkers who had been admitted to hospital. Once workers returned from hospital, they described advising workers on a range of health supportive behaviours such as, *"drink a lot of water," "eat healthily," "take your treatment"* and *"visit the clinic regularly."* In keeping with the sentiments of mine medical staff described earlier, full-time HSRs did on occasion take action to ensure workers got treatment. One respondent (gold site 1), described parading [calling individuals to the mine surface] individuals in the interest of getting them medical attention, in this case for TB.

"I eventually took the initiative …….I took out 2 or 3 people from the underground and took them directly to the hospital. It comes back that those people have got TB but they didn't want to admit that, but we counsel them and make them understand that this can be helped …" (Full-time HSR gold site 1)

6.5 Discussion

This study explored the day-to-day activities undertaken by full-time HSRs in relation to health on underground mines. The findings of the study are indicative rather than conclusive and should be interpreted in the light of several limitations. As presented in the methods, not all full-time HSRs participated in all stages of the data collection as they were no longer in the position and/or available, and as a result we may have missed some of the dynamics over time. Also, meetings of the mine health and safety committee were observed on two mines, due to permission not being granted on the third mine. At the fourth mine, meetings of the mine health and safety committee were not being convened. Our case comparison in this regard was therefore limited. Lastly, the data represents the views of full-time HSRs and the employer rather than that of the trade unions, and the position of major mining trade unions concerning health needs further exploration. Despite these limitations, the findings make some important observations about the role of full-time HSRs that is worthy of further examination through sector-wide quantitative and other studies.

6.5.1 The statutory role of HSRs in occupational health

This paper set out to answer three questions. The first concerned the statutory role of HSRs with respect to occupational health. The results showed that independent of whether the activities were worker- or employer-led, in both instances HSRs were involved with activities that went beyond their statutory role to address occupational health on mines (MHSA Section 102). The study showed that it was not only occupational disease that was shaping the role of worker representatives, but the very high communicable disease burden and the increasing NCD burden too. This finding is not reported in highly-industrialised nations, where the infectious disease burden is low, and NCDs are better controlled in the general population. Thus worker representatives took on a meaningfully different role to their counterparts in highly-industrialised nations in relation to health.

A question then arising from this study, concerns the implications and appropriateness of full-time HSR's involvement in the response to communicable and NCD on mines. Given that health promotion activities are reliant on good communication in many instances, the employer took advantage of full-time HSRs. As a consequence full-time HSRs unwittingly compensated for the employers lack of investment in health, and employers went

unchallenged with respect to germane requirements for peer education and workplace wellness programs that are well resourced. Currently the sector-wide training programme for HSRs does not include a specific module covering HIV, TB and NCDs given this is a non-statutory role for representatives, and therefore, HSRs are additionally ill-prepared for their health promotion role (Mining Qualifications Authority, 2015). The role of HSRs (workplace and full-time) in health, in the mining workplace requires supplementary regulatory guidance that goes beyond that offered under the current legislation, which may hold lessons for other middle- and low-income countries too.

6.5.2 Employer dominance of health-related activities of HSRs

The second question concerned employer dominance of full-time HSRs related to health. HSRs undertook a substantial number of activities under the directive of the employer on a daily basis. The day-to-day reporting of full-time HSRs into the safety department profoundly influenced employer access to representatives, and facilitated employers dominating many of their daily activities including those for health. These activities de facto serviced the employer OHS management system, which resonated with global observations (Nichols and Walters, 2009; Ollé-Espluga et al., 2014; Wright and Spaven, 1999). While the employer supported an intensification of employer-led activities, representative activities that were worker-led faced impediments, or veiled opposition from the employer. This thwarted the capacity of full-time HSRs to act independently of the employer, in matters related to worker health.

Of particular note, full-time HSRs lacked resources necessary for their role. The inadequate provision of instruments to take basic exposure reading, and access to the internet, that would facilitate full-time HSRs acting independently of the employer, resulted in the employer being the sole source of expertise for full-time HSRs. Primarily the safety department, rather than mine health professionals, which can reasonably be surmised to contribute to gaps in HSR understanding of health priorities. Presently there is no guidance in the sector with respect to resourcing full-time HSRs as required under the MHSA (MHSA, Section 31(3)) which requires the employer to provide full-time HSRs with *"facilities and assistance necessary to perform their functions."* Mine employers took advantage of this. Given that all mine sites involved in this study were either global senior or intermediate mining companies (ICMM, 2012) full-time HSRs were seriously disadvantaged by being barred from commonplace technology. Employer representatives readily criticized full-time HSRs for their knowledge gaps about health priorities and their lack of confidence, but were shamefully under resourcing representatives.

HSRs appreciation of the authority of the mine health and safety committee to act in the interests of workers was also absent, and therefore their advocacy role was blunted. The daily meetings of the safety department served to undermine the formal consultation of full-time HSRs with employer representatives at the mine health and safety committee. Of considerable concern was that the meetings of the mine health and safety committee at three sites were non-compliant with the MHSA, either because meetings were not constituted on a regular basis, or because meetings were biased by large numbers of employer representatives. This marginalised full-time HSRs further, and a sector wide study to understand the functioning of these statutory committees and the extent to which they have been able to act on behalf of worker concerns is an urgent priority.

6.5.3 Adaptations given employer dominance and health complexity

Thirdly, although full-time HSRs appeared passive in the face of demands from the employer, it would be incorrect to suggest that their present day role was only shaped by capitulating to employer demands. Full-time HSRs, in general, did not employ the knowledge-based strategies found in Canada (Hall et al., 2006, 2016), Australia (Walters, Johnstone, et al., 2016) and New Zealand (Harris et al., 2012). Only one full-time HSR (platinum site 4) described approaching employer representatives armed with detailed technical information sourced independently of the employer, which although an isolated finding spoke to Hall's *"knowledge activism"*(Hall et al., 2006, 2016). Contrary to a knowledge based strategy, where full-time HSRs across all four sites universally struck out independently of the employer, it was as the compassionate voice for workers. The willingness of full-time HSRs to accompany individual workers to make requests of intolerant supervisors, to take on the role of health promoter, even parading workers about whom they were concerned, and supporting workers both in and after hospital spoke to HSR compassion, rather than their legal mandate. The primary adaptation to the HSR role being to fill a gap which has arisen because of the absence of employer consideration and empathy for workers.

The dominance of the employer suggests that trade unions in South Africa have not developed a robust response to the health context at a site level. Full-time HSRs, whose role was underpinned by mine health and safety collective at each site, and who were therefore party to the *"preferred model,"* were found to be intervening at the individual, rather than structural level. They primarily provided individual focused educational messages and support, largely as a result of their compassionate stance. Globally trade union activists have been hesitant to incorporate the complexity of contemporary health concerns into union strategy, preferring to focus on servicing individual members (Barry and Loudoun, 2006;

Fairbrother, 1996; Loudoun and Walters, 2009). For example, the root cause for workplace stress often lies in the organisation of work (Walters, 2011). Weak trade union strategy was perpetuated in the South African context too. Structural analyses are pertinent for the health priorities on mines which prompted the empathetic actions of HSRs. HIV and TB, for example, owe their high prevalence and incidence to the structural inequities of apartheid mining (Rees et al., 2010). Many mineworkers today live in informal settlements that leave them vulnerable to infectious diseases (Chaskalson, 2016; Makgetla and Levin, 2016). Bullying and racist supervisors have a long history in South African mining (Shaw, 2010; Stewart and Nite, 2017). The sector-wide Culture Transformation Framework aims to change this culture and the elimination of discrimination is one of eleven pillars (Mine Health and Safety Council, 2011b). Currently the sector, including trade unions, make no links between the individual actions of full-time HSRs and the sector-wide plan.

6.6 Conclusion

This study demonstrated the value of a qualitative, case study methodology to understand how worker representatives engaged with health. In the extractive industry, arrangements for worker representation are important and the ratification by six African countries of ILO C176 should be supported (ILO, n.d.). The South African MHSA is aligned with ILO C176, but legislation alone has not ensured the enactment of a role for full-time HSRs that was aligned with the intent of the law. The combination of employer dominance and health complexity meant that where HSRs acted autonomously, it was as the compassionate voice to workers. Thus HSRs in middle- and low-income countries, like South Africa take on a meaningfully different role in relation to health to that of their counterparts in highly-industrialised nations.

Legislation without supplementary guidance about the role of HSRs in health is inadequate and this is a valuable insight for other African states as they ratify ILO C176. In South Africa guidance is recommended with respect to the activities of HSRs, their role in generalized communicable and NCD epidemics, their resourcing and the functioning of the joint employer/employee health and safety committee. In the absence of formal guidance, employers were found to exert significant influence over the activities of HSRs. The study found constraints to the enactment of the *"preferred model"* as it related to health because of employer dominance. Neither have trade unions provided full-time HSRs with strategic approaches to pressing health issues at the mine site.

Chapter 7

7. Paper 4: South African mineworkers' perspectives on the right to refuse dangerous work and the constraints to worker self-regulation

7.1 Abstract

The Mine, Health and Safety Act No 29 of 1996, as amended, embodies worker self-regulation to advance health and safety in the workplace. An important provision for this is the Right to Refuse Dangerous Work (RRDW). This paper explores worker perspectives about the implementation of the RRDW on South African mines against a backdrop of revised guidance in the sector: '*Guideline for a Mandatory Code of Practice on the Right to Refuse Dangerous Work And Leave Dangerous Working Places*' gazetted in February 2016 by the Department of Mineral Resources (DMR) (Department of Mineral Resources, 2016b). A mixed methods study conducted at mines (n=14) included a survey of workers (n=293), focus groups (n=6) and in-depth interviews (n=16). Workers reported a high level of awareness, a positive attitude and experience of the formal RRDW. However constraints to the formal RRDW meant that informal worker resistance to dangerous work was commonplace. Evidence of informal non-confrontational consultation, co-operation and collaboration in the event of a dangerous workplace also emerged between workers and supervisors. The research underscores the importance of the RRDW and worker health and safety representatives to mine health and safety. The revised guidance addresses RRDW implementation gaps, but of concern is the potential partiality towards management interests.

Key words: health and safety, regulatory framework, worker participation

7.2 Introduction

Ensuring that mineworkers act on their duties and responsibilities for health and safety remains a concern across the globe. Article 13 of the International Labour Organization (ILO) Convention Safety and Health in Mines (176 of 1995) entrenched the Right to Refuse Dangerous Work (RRDW) as an important mechanism through which workers act in the best interests of their own occupational health and safety (OHS) and is considered a cornerstone of worker self-regulation (ILO, 1995). Countries ratifying Convention 176 are under obligation to make this right available to workers through OHS legislation that frames the circumstances, procedure and protection of workers from discrimination in the event of a formal work refusal. Ratified by thirty-one countries, South Africa signed Convention 176 in June 2000 (ILO, n.d.). Worldwide studies show that workers use this right with caution

(Hilgert, 2013) and cases associated with work refusal are rarely presented in court (Cooper, 2013; Gunningham, 2007). Rather, where formal notification of a work refusal happens, issues arising out of this are addressed either in the immediate workplace or through the site OHS system and/or at industrial tribunals or similar mechanisms (Harcourt and Harcourt, 2000).

This paper explores the perspectives of South African mineworkers of the implementation of the RRDW and the consequent constraints to worker self-regulation. It considers the applicability of a typology of worker resistance to unsafe work to the findings of a study commissioned in 2013 by the Mine Health and Safety Council (MHSC) conducted by the Centre for Sustainability in Mining and Industry (CSMI), at the University of the Witwatersrand (Stewart et al., 2013). Permission to publish was granted by the MHSC in October 2017.

7.2.1 South African legislation

The RRDW was granted to South African mineworkers post-apartheid with the promulgation of the Mine Health and Safety Act No 29 of 1996 as amended (MHSA) (Republic of South Africa, 1996). That OHS performance on mines in South Africa has undergone a significant shift under the MHSA is uncontested by tripartite stakeholders. Reporting by the Mine Health and Safety Inspectorate (MHSI) about progress against sector-wide OHS targets set in 2003 showed that fatalities during the 10 years subsequent to their setting dropped significantly. Whereas in 2004 there were still 246 fatalities (0,25 fatality rate per million hours worked) this improved to 93 fatalities (0,09 fatality rate per million hours worked) at the end of 2013 (Chamber of Mines South Africa, n.d.), continuing until 2016, when the lowest number of fatalities (73) was recorded (Phakathi, 2016). The downward trend was broken in 2017, for which unofficial figures stand at 86 fatalities (Chamber of Mines South Africa, 2018).

The South African expression of RRDW closely reflects that of the Convention 176 which grants workers the right to remove themselves from any location at a mine, when circumstances arise, which appear with reasonable justification, to pose a serious danger to their health or safety (Masilo and Rautenbach, 2010). Section 23 of the MHSA states that an employee has the right to leave any working place whenever,

"(a) circumstances arise at that working place which, with reasonable justification, appear to that employee to pose a serious danger to the health or safety of that employee; or

(b) the health and safety representative responsible for that working place directs that employee to leave that working place." Section 23 (Republic of South Africa, 1996)

Although under South African law the OHS right is expressed as the Right to Leave a Dangerous Working Place (RLDWP), in practice on South African mine operations it is referred to as *"Section 23"* or the '*Right to Refuse Dangerous Work*', rather than the RLDWP. The South African expression of this right, under Section 23, has none of the constraints found in other jurisdictions such that the danger must be *"imminent"* or *"imminent or unavoidable,"* as in Canada, Ghana, Burkina Faso, UK, and US (Hilgert, 2013). The *'circumstances'* in which the right can be exercised are not defined and therefore a worker can, under law, subjectively believe the workplace to be seriously dangerous. Thus, physical conditions in the workplace, the condition of equipment and machinery and the competence and behaviours of workers are among some of the major factors that could contribute to the workplace being considered dangerous under the Act.

Section 23(b) permits a worker elected or selected health and safety (H&S) representative to withdraw workers from a workplace he or she considers dangerous. On South African mines there are two tiers of H&S representatives, workplace and full-time H&S representatives. Workplace H&S representatives keep their job of employment and exercise their powers in a designated workplace only. Full-time H&S representatives are employed in a full-time capacity in health and safety and exercise their powers across the whole mine site. Both types of H&S representatives can withdraw workers from a workplace they consider dangerous. Chapter 3 of the MHSA requires that the employer enters into a health and safety collective agreement signed with recognised unions on site (note; the collective agreement is defined in the Labour Relations Act No. 66 of 1995, as amended 2002 (Republic of South Africa, 2002). This agreement determines the process and numbers of worker elected/selected H&S representatives, the constitution of the bipartite mine H&S committee and importantly provides for local worker consultation at the mine operation in the drafting, review and agreement of OHS policy and procedure, including the mine site procedure for the RRDW. These arrangements apply to both large and small mines in South Africa. This is in contrast with other jurisdictions worldwide, where RRDW procedures are part of the statute. On the one hand, statutory procedure provides clarity about what must be done, but on the other, opens up the opportunity for legal action to challenge workers on the adherence to procedure (Cooper, 2013; Harcourt and Harcourt, 2000). In South Africa, workers are not subject to a statutory procedure and both individual workers and H&S representatives are

granted protection from discrimination (Section 83 MHSA) in the event of exercising the RRDW.

7.3 A typology of worker resistance to unsafe work

The employer and management determine the structure and organisation of the workplace and workers must find ways to assert themselves within this paradigm, either through confrontation, or via non-confrontational methods, such as persuasion, influencing, coaxing or side stepping. The decision to withdraw from a dangerous workplace, as in the case of the formal exercise of the RRDW, is a unique moment under law in which workers have permission to '*confront'* the control of the workplace by management. Thus '*confrontation'* is integral to the exercise of the right. Gray (2002) introduced a typology of worker resistance to unsafe work. He described the formal exercise of the legal RRDW as *'formal confrontation*.' By formally refusing to work, a worker, under the protection of the law, can assert control over his or her workplace and demand that the problem be resolved either in the workplace itself, or through escalation to formal structures such as the bipartite worker/employer H&S committee, or through an external agent such as the H&S inspectorate and/or legal dispute mechanism. The South African '*Guideline for a Mandatory Code of Practice on the Right to Refuse Dangerous Work And Leave Dangerous Working Places'* gazetted in February 2016 by Department of Mineral Resources (DMR) (Department of Mineral Resources, 2016b) was a consequence of the study on which this article is based (Stewart et al., 2013). The Guideline promotes the resolution of disputes at the lowest organisational level, or in the event of this failing, through the appointment of an external technical advisor to advise both the mine section manager and the full-time H&S representative. The mine H&S committee is required to monitor all incidents of RRDW. The formal exercise of the right in South Africa, as in other contexts, can, therefore, theoretically result in high-level decision making related to OHS.

For Gray (2002), however, the formal exercise of RRDW is only one expression of work refusal. By asking the question, *"when does a safety refusal actually begin?"* Gray explores the origin of worker refusals. His ethnographic work, conducted in the Canadian manufacturing sector, found that workers resist unsafe working conditions without formally refusing. In such cases, a challenge is mounted to the management of the workplace, or to the process of production, but remains outside formal procedure - thereby rendering it *'informal.'* This prompted Gray to name this type of work refusal, *'informal confrontation.'* These efforts on the part of workers most often involve confrontation with supervisors and/or colleagues to cope with unsafe working conditions and are subsequently resolved in

the workplace only, in marked contrast to the first approach (formal confrontation), where a problem can be escalated.

Gray further advances his evidence-based view by arguing that not all forms of work refusal or resistance to unsafe work are confrontational. Thus, a worker can complete a complaint notice and *"ask"* (*'informal non-confrontational'*) for management to look at the problem - rather than *"demanding"* that it be corrected through refusing to work. By laying a written complaint the worker avoids the inevitable confrontation associated with refusing to work, whilst at the same time he or she is indicating to the employer that something is sub-standard and therefore unsafe. It is long established that workers make private arrangements in the workplace to manage OHS hazards (Walters and Haines, 1988;Phakathi, 2002). Gray (2002) argues that *'private safety refusals'* of workers are in fact the most common form of work refusal. They include the personal interventions of individual workers to redesign a task so it is safer and avoidance strategies to sidestep unsafe work, such as being sick or asking for a transfer. These strategies are all driven by OHS concerns, but do not challenge, or confront, either management and/or the social relations of production. Rather, the reasons behind these individual actions remain hidden. Thus, Gray provides a useful typology with which to consider worker responses to an unsafe workplace; formal confrontational; informal confrontational; informal non-confrontational.

This paper draws on Gray's typology to assist the interpretation of the findings of a mixed methods study with respect to South African mine worker experience of the RRDW.

7.4 Methodology

The cross-sectional study used a concurrent triangulation mixed methods approach (Cresswell et al., 2003). Quantitative and qualitative data were collected at the same time and then integrated and triangulated at the data analysis stage. Fieldwork was conducted between June and September 2013 and comprised a representative quantitative survey, focus group discussions and key informant interviews. Access to the two sets of respondents for the quantitative survey and the qualitative research was primarily facilitated by the training centre on surface at each mine. The study had approval from the Human Research Ethics Committee (HREC) non-medical, University of the Witwatersrand (Ethics Clearance Protocol Number H13/05/19). Respondents participated on the basis of informed consent and anonymity.

7.4.1 Quantitative survey

The survey was conducted at 14 mine sites (5 platinum, 5 coal, 3 gold mines and 1 nickel mine), stratified by commodity sector and geographical spread across three provinces

Mpumalanga, Gauteng and North West. As specified in the MHSC research brief and time frame, a list of all the major mines employing 2000 and more employees in these three provinces was drawn up. Mines were telephonically contacted to identify sites able and willing to host the project. The sites were hence all large mines with established OHS systems, which means this research has relevance for the large-scale mining sector, but excludes the small-scale mining sector. The timeline and budget did not allow for a comprehensive and random sample drawn from employee wage rolls or from specific workplaces. Surveys were instead administered on different days and times of day to respondents on surface undergoing ex-leave induction. This is a limitation of this study. The survey nevertheless reached workers (n=293) (refer to Table **17**) with findings statistically having a simple margin of error of 5.7%. The quantitative research instrument comprised forty closed and Likert-type statements or questions and one open ended question. The questionnaire was read to respondents in either English or an indigenous language, predominantly isiZulu, isiXhosa or Southern Sotho.

Table 17: Quantitative survey: Number of worker respondents per sector.

Respondent category	Coal & other sector	Gold sector	Platinum sector	Total
Workers	109	64	120	293

7.4.2 Qualitative research

Qualitative research was conducted at 6 of the 14 host sites - 2 gold, 2 platinum and 2 coal mines. Focus groups (n=6) with workers (n=84) were conducted, one at each site, and were recorded, translated and transcribed. In-depth interviews were conducted with H&S representatives (n=5) and union officials (n=5) at five sites only. Six worker respondents (n=6) were identified in focus group discussions as having had a direct experience of the RRDW, all of whom worked on gold mines and were subsequently interviewed. All the key informant interviews were conducted in English and notes were taken. The purpose of the qualitative research was to identify key issues, concerns and themes relating to the RRDW as expressed by worker respondents and other relevant key informants. While saturation point was not reached, specific data repeatedly emerged. Quotations cited in the text were invariably similarly reported by other respondents.

Given that the RRDW is legally bestowed on workers, this paper focuses on the experience of workers and their H&S and union representatives. Mine site documentation made available to researchers, such as lists of incidents and accidents and incident/injury

investigation reports, were not consistent across the host mining companies and did not enable the details of specific RRDW incidents described by respondents to be corroborated through a document review. Researchers (which included authors) noted evidence arising through observation at research sites of mine site communication concerning the RRDW.

7.4.3 Analysis

Quantitative data was analysed using Statistical Package for the Social Sciences (SPSS), Version 15.0. All qualitative data was analysed for inductive and deductive themes. The analysis used a concurrent triangulation approach, thus both quantitative and qualitative data was used to make meaning of workers' experiences of the RRDW. Quantitative data was largely not analysed against cross-correlations for demographic and other descriptors. Workers included in the focus group discussions were not selected for certain demographic or other characteristics.

7.5 Findings

The term 'workers' is used in this paper to refer to both permanent mine employees and contract workers except at a couple of points. As the terms *'Section 23'* and *'Right to Refuse Dangerous Work'* (RRDW) were used by workers in their commentary, both these terms are used in the presentation of the data. Findings are presented under three major headings which broadly aligned with the typology developed by Gray (2002): Formal confrontation, informal confrontation and non-confrontational responses to the exercise of the RRDW when faced with a dangerous workplace. Percentage figures used in the findings are drawn from the survey results. Quotations and other descriptions are taken from the qualitative data.

7.5.1 Demographics of worker respondents

Table **18** captures the demographic characteristics of the survey population of worker respondents of whom 65% were over the 30 years of age and 88% were men. Workers (72%) reported more than 3 years of service at the present mine operation and 42% reported more than 6 years of service. A fifth of the sample were contract workers, in keeping with estimates cited elsewhere (Forrest, 2015). Overall, the experience and stability of the sample suggested respondents were qualified to consider the topic of the RRDW.

Table 18: Demographic profile survey respondents (n=293).

Variable	Category	# of respondents	%
Age	21-30 yrs	93	32
	31-40 yrs	97	33
	41-50 yrs	61	21
	51+	40	14
Sex	Male	257	88
	Female	35	12
Race	African	272	93
	Coloured	3	1
	White	17	6
Citizenship	South African	253	87
	Non-South African	39	13
Job status	Employee	228	78
	Contractor	60	20
	Don't know	5	2
Years in mining	< 1 yr	29	10
	1-2 yrs	35	12
	3-5 yrs	80	27
	6-10 yrs	63	22
	> 10 yrs	85	29
Years at mine (where research conducted)	< 1 yr	28	10
	1-2 yrs	52	18
	3-5 yrs	89	30
	6-10 yrs	60	20
	> 10 yrs	63	22

7.5.2 Formal exercise of the RRDW (formal confrontation)

These findings describe quantitative and qualitative data pertinent to the formal exercise of the RRDW including workers' awareness, attitude, knowledge of procedure and experience of the RRDW.

7.5.2.1 Awareness of the RRDW

Awareness of the RRDW was high. Workers (95%) reported having heard of the RRDW with uniformly high reporting across all mining commodities.

> *"The law does not allow people to work in dangerous places. Should one disobey such a law, he is reprimanded."* (worker)

On site, researchers found evidence of communication campaigns promoting the RRDW. Notice boards in waiting areas, audio-visual displays, leaflets, stickers on hard hats, internal radio, RRDW cards and tool box talks were used at different sites to reinforce awareness of the RRDW. On one coal mine, the mine manager issued each employee with a card bearing his signature making the *"demand"* that all mine employees exercise their RRDW.

7.5.2.2 Worker attitudes to the RRDW

Given the South African mining industry's legacy of discrimination, appalling OHS performance and victim blaming (Shaw, 2010; Stewart and Nite, 2017) researchers were surprised by the positive response of workers to statements used to uncover prevailing attitudes to OHS. The majority of workers stated they 'disagree' (79%) with the statement, *"Workers don't have the RRDW"* (refer to Figure **11**), which was reinforced by employees (84%) and contractors (83%) reporting feeling 'safe' at work. A third of the sample (35%), however, agreed with the statement *"Management is not serious on health and safety,"* which underlines why the ''*Culture Transformation Framework*'' in the South African mining sector, with its commitment to transform legacy issues that encourage short cuts and risk taking with respect to OHS, is pertinent. (Mine Health and Safety Council, 2011b)

Although the majority of workers stated that they *"have the RRDW",* over a third of workers (35%) agreed that *'workers use danger as an excuse'* and that the RRDW is open to abuse. While the underlying reasons for the specific individuals saying this were not explored, the RRDW is cited in industrial struggles other than those associated with OHS (*National Union of Mineworkers & others v Chrober Slate (Pty) Ltd*, 2008). The RRDW was used at the start of the 2012 platinum mineworkers strike for wage increases (Chinguno, 2015; Moodie, 2016). In this instance, mineworkers invoked Section 23 to decisively slow down production in order to draw attention to their demands outside established industrial relations mechanisms. That the RRDW was used in this instance to leverage worker improvements, outside of OHS, supports workers' (35%) views noted in this study, that the RRDW is open to abuse.

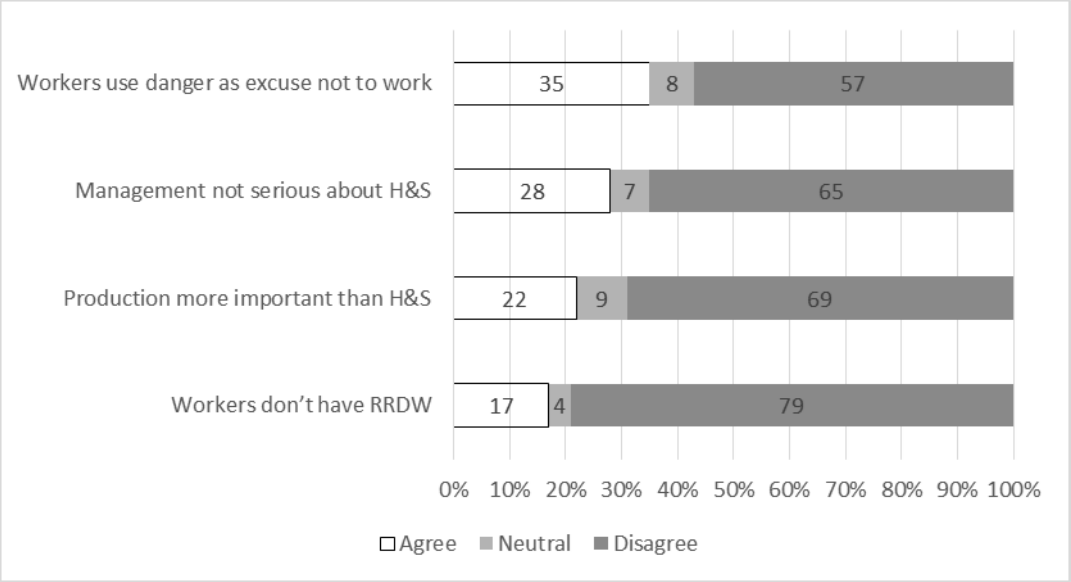


Figure 11: Worker (n=293) attitudes to the RRDW, OHS and production.

7.5.2.3 RRDW procedure

Employer risk management underpins the MHSA and involves the identification of hazards, an associated risk assessment and the implementation of control measures for which there is a hierarchy of options. Risk assessment under the MHSA is required as a baseline, is issue-based (where more in-depth assessment is required) and designed to be continuous (on a day by day or periodic basis). Ground conditions, gas emissions, airborne pollutants and the condition of equipment are good examples of matters subject to continuous risk assessment. It is the continuous risk assessments where the RRDW has most currency for workers. The interface between risk assessment, safety rules and RRDW procedure was found in this study to be poorly articulated. Although workers (96%) understood there was a procedure for RRDW, as is required under the MHSA, in focus group discussions many workers could not articulate the steps of a RRDW procedure. Despite the requirement under the MHSA for RRDW procedure to be developed on site in consultation with worker representatives as a component of the H&S collective agreement, workers reported being neither involved in the preparation of RRDW procedure, nor able to state how procedure had been developed. While it could be expected that any formulation of the procedure for the RRDW must be; to stop work, remove oneself, inform others of the danger, barricade the area, and report the incident, instead, when asked about RRDW procedure, workers stated general safety rules and procedures such as:

> *"1. Never enter an unsupported roof; 2. Never operate a machine without a licence; 3. Lock out and do not allow someone to enter a*

dangerous workplace; 4. Do not enter a place with no ventilation." (worker)

"They say if the place is dangerous you must fix it first. It is one of the four steps. It says: Fix the place. Evaluate the material you are using to make sure that it is proper so as to prevent danger. The third one – stick to the process of safety. And the last one says you must fix it now." (worker)

7.5.2.4 The RRDW applied to safety rather than the protection of health

Major hazards contributing to occupational disease must be considered within any risk management framework. However, improvements in occupational health (OH), especially related to silicosis and noise induced hearing loss, have been slow in the South African mining sector (Murray et al., 2011; Strauss et al., 2012), only recently showing signs of improvement (Department of Mineral Resources, 2017). Qualitative research findings in this study suggested the RRDW is overwhelmingly embedded in the safety culture of mines rather than health protection. Workers contextualised their commentary about RRDW with reference to specific safety hazards such as rock falls.

"We talk about safety. We say we must respect danger and not work in a dangerous place. We say we must be cautious of places where we are working in. Let us look at the hanging walls." (worker)

Although excessive dust and poor ventilation were cited in some instances by respondents as grounds for exercising the RRDW, there was no mention of excessive noise or fatigue. In focus groups, workers described their experience of fatigue and its association with dangerous work practice, but not with the exercise of the RRDW. Fatigue was attributed to the absence of team members, walking long distances carrying equipment, working long hours, feeling hungry, or exposure to heat, but not cited as reasons to stop work.

"I would advise the mine to employ more people. We are short. You are forced to do many jobs alone and that is tiring." (worker)

When asked in the quantitative survey about training on major hazards in the last 12 months, reported training related to dust was lower than that for either support standards, or a hanging wall for underground gold and platinum employees (refer to Figure **12**). This suggests there could be gaps in worker knowledge related to dust and respiratory disease. Researchers did not, however, review training materials and programmes related to worker preparation for the exercise of the RRDW and/or worker tuition related to the identification

of major hazards to corroborate this. Another explanation for the disconnection between worker exposure to OH hazards and the exercise of the RRDW is the latency period between exposure to hazards such as dust and noise, and the final onset of disease. Although over time, many more workers have suffered the consequences of occupational disease rather than occupational injury (Guild et al., 2001), unless the trajectory of disease is well understood it is unlikely that workers see exposure to health hazards as life threatening and meriting the exercise of the RRDW.

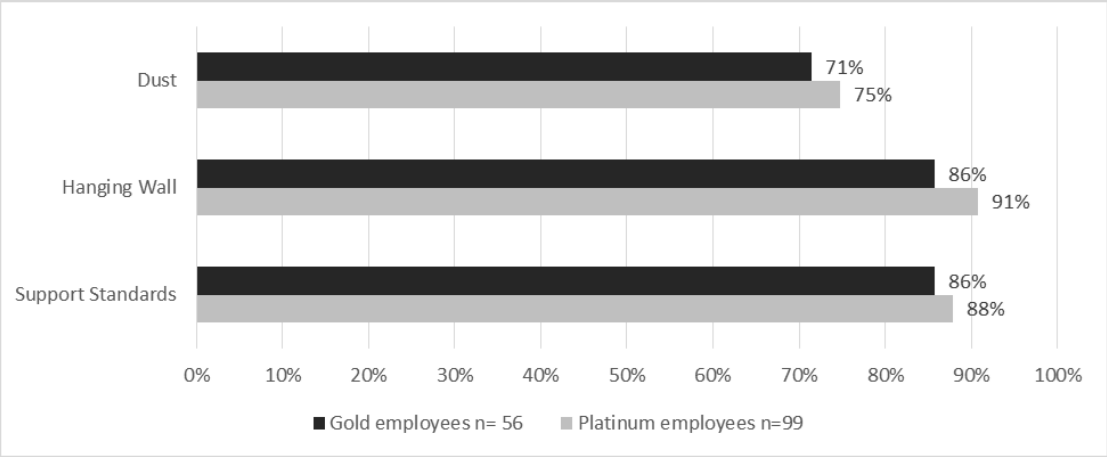


Figure 12: Reported training by underground employees in the last 12 months on the major hazards in gold and platinum.

7.5.2.5 Full time employees and contractors' individual responses to a dangerous workplace

Workers (45%), represented by employees (48%) and contractors (34%) reported that they had personal experience of a dangerous workplace in which they did not want to work (Refer to Figure **13**) of which 76% of incidents had occurred in the last three years. Noteworthy was that contractors were less likely to report personal experience of a dangerous workplace than full time mine employees, which suggested contractors were less equipped to make this call. Worldwide, it is well established that contractors are vulnerable with respect to workplace OHS (Gunningham, 2008; Tucker, 2013), as has been reported on South African mines (Hermanus, 2007; Loewenson, 2001). As the employment of contract workers increases, specifically on South African platinum mines (Forrest, 2015), the finding that they are less equipped to respond to a dangerous workplace is of concern.

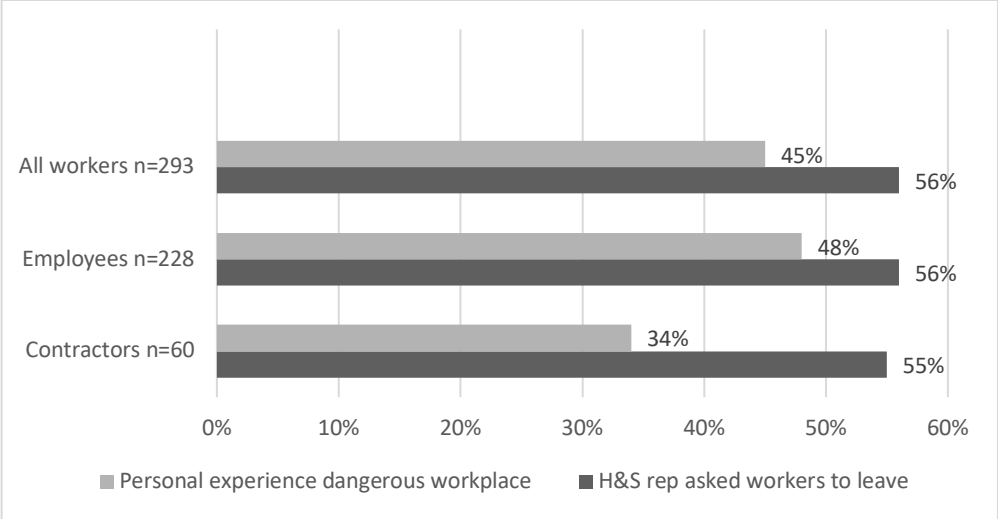


Figure 13: Workers, employees and contractors who reported a personal experience of a workplace too dangerous to work in and who had been asked to by an H&S representative to leave a dangerous workplace.

Of the 45% of workers (n=132) who had identified a workplace too dangerous for work, 65% (n=86) did not return to the unsafe workplace (exercising the formal RRDW) and 83% thought the RRDW procedure adequate. Figure **14** provides a description of those who successfully exercised the RRDW. Of note, the majority were underground workers (87%) and had more than 2 years mining experience. Of the overall sample of all workers (n=293) it can be inferred then that 29% of these had exercised the formal RRDW, by having not continued in a workplace they had judged to be dangerous.



Figure 14: Description of workers (n=86) who exercised the RRDW and did not return to an unsafe workplace.

7.5.2.6 Workers' experiences of managements' response to the RRDW

Weighing up production pressure against working safely and *"feeling bad"* because of lost production (and hence bonus earnings) were described by workers as part of their experience of the formal RRDW. The payment of production bonuses has a long history in South African mining and is a deeply entrenched practice (Moodie and Ndatshe, 1994). In fact worker and supervisor self-interest to reach production targets and secure production bonuses impacted on both 'formal' and 'informal confrontation' to a dangerous workplace because bonuses pitch production against safety. A culture of short cuts to overcome common obstacles to the production process is well described in the gold sector (Phakathi, 2002, 2018). Qualitative data found that when workers had exercised the RRDW supervisors and management were either straightforwardly co-operative, or pushed back, but complied. In both instances underlying concerns about money shaped the emotional response; workers, supervisors and managers often felt *"bad"* because workers lost bonuses, supervisors lost production (and bonus earnings) and managers faced additional expenditure.

> *"We the workers identified the hazard. As a team we took the decision to stop working… Both supervisors and the H&S representative made the decision and supported us to stop working. …The safety officer recommended that the panel must be mined from another direction and the situation got resolved. The rock engineer was involved and workplace was made safe… there was a loss of production due to the incident. I felt bad because we lost production. They also felt bad-including the reps, the supervisors and managers."* (worker)

> *"I was working on Sunday… In the stopes there were misfires… we could not work, but the matter was taken to the Foreman who was very cross about our decision. He was forced to book us for another Sunday to come and perform the same job."* (worker)

7.5.2.7 The role of the H&S representative in implementing the RRDW

Worker elected H&S representatives are acknowledged globally to contribute to better OHS outcomes (Walters, 2006; Walters and Nichols, 2007). In keeping with this, workers (56%) reported they had been asked to stop work by an H&S representative, which was higher than those workers (48%) who reported a personal experience of a workplace in which it was too dangerous to work (refer to Figure 13) and higher than the workers (29%) who exercised the RRDW. Although the survey did not establish if workers having withdrawn

from a workplace under instruction from an H&S representative only went back when they felt it was safe to do so. Qualitative data found workers consistently referred to the workplace H&S representative before and after withdrawing from a workplace.

> *"If it is dangerous underground we talk to the safety rep and we take it from there. The safety rep is always with us underground."* (worker)

Although workers were more likely to be asked to withdraw from a workplace under the instruction of an H&S representative, workers were then critical of the capacity of individual H&S representatives to challenge supervisors and to subsequently get workplaces made safe. Workers suggested that either the H&S representative lacked power and/or interpreted his or her role incorrectly.

> *"Before that when I was in a dangerous place I went to the waiting place. When he [the miner] saw me he started shouting at me. The safety rep was there, but he never said anything. He did not really care as they do not have powers."* (worker)

> *"However, there are times whereby the Safety Rep is not working properly. For instance, if there is a place that is not safe to work in, he will go to the Supervisor and report the matter after he has barricaded the place. The question is what if that place is not fixed for 6 months?"* (worker)

As a consequence, hazards triggering the withdrawal of workers from the workplace appeared unlikely to be escalated beyond the immediate workplace.

7.5.3 Informal exercise of the RRDW (informal confrontation)

The formal exercise of the RRDW was not found to be the default position for mineworkers concerned about a dangerous workplace. Instead there were several commonplace impediments to the exercise of the right that in practice rendered worker responses to a dangerous workplace as instances of 'informal confrontation.' Most of these constraints to the exercise of the formal right were best described in the qualitative data. However, the survey revealed that of workers (45%) who reported experiencing a dangerous workplace that he or she had judged to be unsafe for work, almost a third (32%) ended up back in the workplace despite this. Possible explanations for this are that concerns about the disputed workplace were not resolved to the satisfaction of workers and not escalated beyond the immediate workplace or, that these workers experienced pressure (from other workers) or

coercion (from supervisors) and returned unsatisfied to the workplace having failed in their formal exercise of the RRDW. Such workers would then have faced a situation of informal confrontation. Qualitative data revealed a complex set of issues that arose with respect to exercising the RRDW. These issues mainly focused on stories of confrontation with supervisors and co-workers, which had not been formally managed, and related to contextual factors in the workplace.

One such contextual factor was the difficulty of working in a production team. One respondent described how the team blurred his or her judgement by 'normalising' a situation he or she had, in the first instance, judged to be dangerous.

> *"We refused, but then continued blasting maybe 10 of us in a crew… you even forget you are in that dangerous place."* (worker)

More positively, another respondent had answered that: *"Communication in the team facilitates RRDW."* Although in the absence of effective communication, once a worker withdrew from the workplace he or she faced possible confrontation with other team members, either with or without the backing of a supervisor.

> "I stopped working for 35-40 minutes waiting for the miner… they (my production team) were cross. One of the team was very cross and said he can't work like this." *(worker after exercising the RRDW)*

The same worker said,

> *"No! They [other workers] wanted to leave, but after discussion with the miner [supervisor] they had to carry on working… I think the miner was not supposed to pressurise the operators. I don't know what would have happened if they refused to work."* (worker)

A second contextual factor was fear. Workers described being either too scared to report dangerous circumstances and/or were fearful of repercussions.

> *"Even if there is (Section 23) we are afraid to speak out. We are afraid because we might lose our jobs."* (worker)

Workers specifically described supervisor threats and vindictive behaviour that suggested worker fears were not unfounded.

> *"For instance, if you refuse to work the shift boss will tell you about his qualifications. Therefore, you are forced to go and work because he is more educated than you."* (worker)

> *"I refuse and tell you that I cannot work in these conditions then he [supervisor] will send for your colleague and your colleague will go and work. But he will victimise you because you refused and the treatment you get will be different from others. [If] You have a personal problem one day, he will not help you because of what you did the other day,that you refused to work in a dangerous place."* (worker)

In fact, the RRDW was described by one worker as being part of an impossible choice. It was often a case of either getting *"in*[to] *trouble"* when exercising the RRDW or being *"at fault"* in the event of a subsequent accident.

> *"Once you practice section 23 you are in trouble. But if you tell people to go and work in a dangerous place and something like an accident happens, you are at fault."* (worker)

7.5.4 Informal non-confrontation, consultation and keeping quiet in a dangerous workplace

From the quantitative survey results it can be inferred that the informal non-confrontational approach to dangerous workplaces may predominate over confrontation, whether formal or informal. Of the workers (45%) who had a personal experience of a workplace that was unsafe for work, very few workers (4%) did not speak with anyone, which showed that almost all workers voiced their concerns.

When asked to mention everyone they spoke to, workers stated their supervisor (71%) (which rose as high as 87% on gold mines), colleagues (58%), management (27%), their H&S representatives (32%), their union representative (33%) and 10% noted 'others' to whom they spoke (refer to Figure **15**). This strongly suggested wide consultation, cooperation and collaboration in the immediate workplace especially with supervisors, which is not necessarily or inevitably confrontational when assessing workplace OHS issues in general, and the exercise of the RRDW in particular.

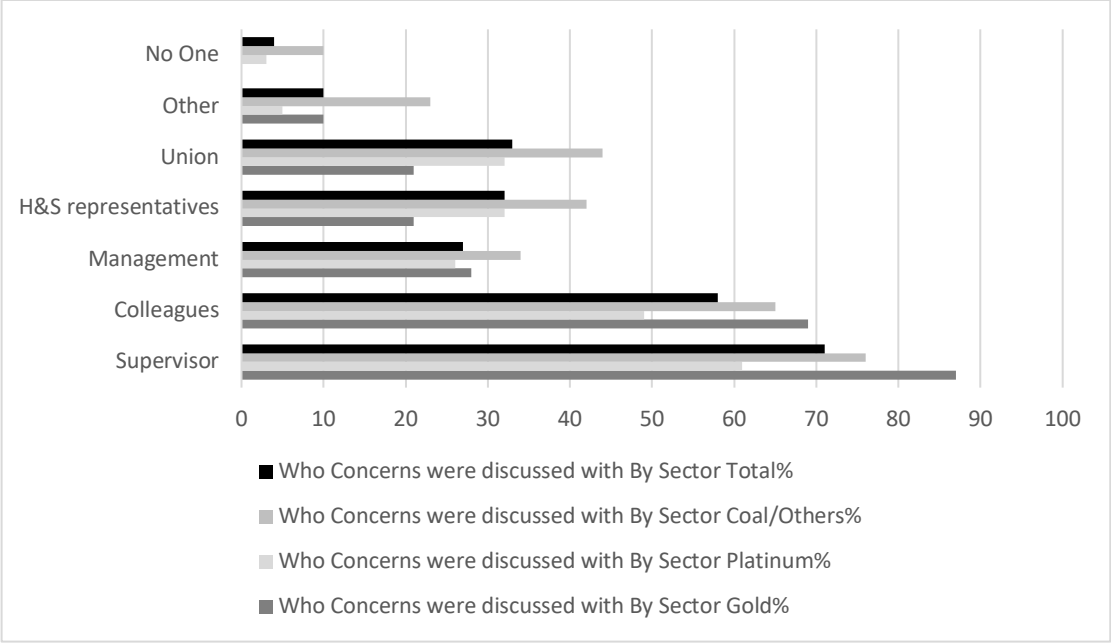


Figure 15: Who workers (n=132) approached about their concerns when faced with a dangerous workplace in which they did not want to work.

In the qualitative data, by way of contrast, a trade unionist described workers' earlier fears with respect to a specific worksite may only emerge once an accident has occurred. This suggests in some instances workers also keep quiet about their concerns about a dangerous workplace, although in this case it does not preclude workers from engagement with colleagues.

> *"It is when there is a problem of an injury is the time when you will hear workers saying we have seen that place is wrong, but we were afraid to report it."* (trade unionist)

7.6 Discussion

The RRDW is the only mechanism under law through which an individual worker can exercise direct control over their health and safety in the workplace. This right underpins self-regulation in OHS for workers. While non-compliant OHS behaviours, such as bonus chasing over safety, stand out in the challenge to institutionalise worker self-regulation in the interests of zero harm, further research is required to establish the extent of consultative, co-operative and collaborative interactions at work. The evidence is clear that when considering implementing the RRDW, workers do not tend to do so without consultation, statistically speaking, first with their supervisors, then with colleagues and then only – in equal measure with management and their H&S representative – all before approaching their trade union or speaking to any 'other' persons. Deciding whether the RRDW is justified

or not is often complex and hence Gray's question as to when a safety refusal actually begins.

Given the spectrum of worker experience and perspectives of workplace refusals, Gray's typology provided a useful framework to consider why the formal expression of RRDW is not the default position of South African mineworkers and that informal expressions of workplace refusal are commonplace. While the study was not designed to test Gray's typology, viewing the evidence through its lens prompted both an interpretation of the gaps in our present understanding of the exercise of the right in South Africa by exposing the hidden aspect of the RRDW, namely that the non-confrontational approach almost certainly outweighs formal and informal confrontation. The application of the typology certainly provides a very useful framework for any future studies of the RRDW on South African mines and revealed new research questions.

7.6.1 Formal confrontation

This study found very high levels of awareness and ample evidence of worker resistance to an unsafe workplace, but which did not find full expression through the formal exercise of the RRDW. Workers (29%) reported a formal experience of the RRDW and over a half (56%) reported having been asked to leave a dangerous workplace by an H&S representative. Thus the formal exercise of the right is very important for workers and worker H&S representatives made an important contribution to this.

The formal exercise of the RRDW however on large mines faces three impediments. Firstly, workers are not homogenous; contract workers, were less equipped to make this call. Secondly, the preparation of workers to exercise the formal RRDW was inadequate, because workers were unable to state procedure for the RRDW and/or differentiate it from general safety rules and risk management. Moreover, the context for the exercise of the RRDW was found to be predominantly one of safety, and not occupational health. In short, workers had limited understanding of when, and how, the formal exercise of the RRDW had relevance. Thirdly, although the findings showed that workers were more likely to leave a dangerous workplace under the instruction of an H&S representative, workers also reported that representatives were not always able to escalate issues beyond the immediate workplace.

The fairly recent statutory 'Guideline' - issued by the MHSI (Department of Mineral Resources, 2016b) with respect to the RRDW – and implemented in July 2016 - was informed by the findings of this study and a desktop review of international legislative experience in Australia, Canada, Europe and Zambia (Cooper, 2013). The Guideline addresses issues raised

in this study and therefore seeks to strengthen the implementation of the formal right, specifically by emphasizing the importance of training in relation to RRDW procedure, and through the promotion of the exercise of the RRDW in relation to OH hazards. Furthermore the 'Guideline" attempts to bridge the difficulties in escalating issues by advising that a workplace H&S representative should escalate a dispute to the full-time H&S representative, who if necessary, should be given access to a technical adviser, with the support of management in order to reach a satisfactory resolution. (Annexure 3, RRDW guidance) (Department of Mineral Resources, 2016b).Strengthening the direct relationship between workplace and full-time H&S representatives in a procedure may assist the escalation of issues beyond the immediate workplace, however to date, there is no empirical evidence available of whether H&S representatives utilise the technical advice already available to them under Section 30 MHSA *powers and functions H&S representatives* (Masilo and Rautenbach, 2010). This study suggested H&S representatives were unlikely to do this, either because H&S representatives *"do not have powers"* or are *"not working properly."*

International studies show that a supportive regulatory steer fortifies arrangements for worker self-regulation (James and Walters, 2002; Weil, 2007) and globally, neoliberalism is accredited with an increase of management dominance over the arrangements for worker representation (James and Walters, 2002; Johnstone et al., 2005). One reason for this is the rise of behaviour-based OHS management systems that emphasize worker compliance with mine standards and procedure rather than consultation with autonomous worker representatives (Gunningham and Sinclair, 2009; Quinlan, 2014; Walters, Quinlan et al., 2016a). A contention with the present MHSI guidance is that there is an undercurrent of management perspectives on the RRDW. The technical adviser, if appointed assists both worker representatives and the employer to reach a decision in relation to a workplace where the RRDW has been exercised. However, in the event of this failing, then *"the employer must make a final decision on all issues on which there is disagreement after consultation with such technical advisor."* (Annexure 3, RRDW guidance) (Department of Mineral Resources, 2016b) *(paragraph 4.5).* There is no recommendation that the H&S representative requests support from the MHSI, although Section 30 (MHSA *powers and functions H&S representatives)* states that a representative can contact the inspectorate and request an inspection. Without a shared commitment by all tripartite stakeholders to the RRDW as a critical component of worker self-regulation, the RRDW comes into sharp focus as the last control in the event of the risk management process failing. The manager who issued a card to *'demand'* that workers exercise RRDW crossed a thin line, because the

RRDW is not part of the employer arsenal for risk management. A management perspective on the RRDW, as opposed to that of an empowered and autonomous worker, confident of his or her rights, was reflected in the voice of the worker, who commented that the exercise of the RRDW is often a case of an impossible choice, getting *"in*[to] *trouble"* (with management) when instituting the right by slowing the production process, or being *"at fault"* (with management and taking the blame for being in a dangerous workplace) in the event of a subsequent accident.

To avoid this criticism management must consistently act in support of a worker who exercises the right, and make the '*demand*' that supervisors respect worker withdrawal from the workplace and provide support to workplace H&S representatives who wish to escalate an issue beyond the immediate workplace. Without adequate regulatory monitoring and the data shows, management has stressed that workers need to exercise the RRDW. RRDW is potentially compromised by this irony – this being that management and not labour representatives are pushing for, educating and encouraging workers to exercise the RRDW. Under the present global regime of increased individualism and responsibilisation in OHS discourse (Gray, 2009), the question has already been raised in the South African context of workers being blamed for *not* having refused dangerous work.

"Might a worker be in breach of safety legislation in the event that they do ***not*** *[emphasis in original] refuse to leave and continue to work in a dangerous place, and consequently be blamed?"* (Stewart and Nite 2017:265)

7.6.2 Informal confrontation

In keeping with the Canadian study (Gray, 2002) the qualitative data revealed stories of *'informal confrontation'* that arose as workers responded to and resisted dangerous working conditions. This is an important finding as it confirmed that regular expressions of worker resistance to a dangerous workplace were occurring on South African mines, although it did not find expression and resolution in the formal exercise of the RRDW as intended in the legislation. Contextual factors such as incentivised production targets, working in a production team, peer pressure, supervisor threats and fear of repercussions and loss of earnings were all obstacles to the implementation of the formal right. Resistance to dangerous work was then resolved informally through peer pressure and/or supervisory coercion resulting in the capitulation by those workers who initiated, but failed to exercise the RRDW – or who had their fears downplayed. Nearly a third of workers who personally had experience of a workplace too dangerous for work continued to work there. The finding suggests further studies investigate informal, as well as formal expressions of resistance to a

dangerous workplace. Such a study would provide a more accurate measure of non-compliance with the RRDW. Given the dominant narrative of workers in the qualitative research *'informal'* rather than *'formal'* confrontation may in fact be more commonplace.

7.6.3 Non-confrontational

Gray suggested that the RRDW should be re-conceptualised to embrace a range of administrative and organisational procedures. Informal, non-confrontational approaches to addressing an unsafe workplace were not a specific focus of this study. Neither did workers spontaneously offer in discussions any other mechanisms they used to alert management to a dangerous workplace. A union representative suggested that only in the event of a safety incident will workers admit to their prior safety concerns. There is then scope for the *'private safety refusals'* and avoidance strategies described by Gray as workers are certainly aware of problems but sometimes remain silent, which warrants further investigation. The more interesting finding, however, was that the highest proportion of workers addressed their concerns regarding a dangerous workplace with their supervisors, before even their colleagues, their H&S representative or trade union. This points to a very significant change in the OHS culture and climate in the South African mining industry given its difficult past. It is arguably within this normal, yet hidden arena of routine day-to-day active consultation and collaboration at work and actual practice that models of optimal social relations and OHS compliance in the workplace may be discerned. A more mature OHS culture could be expected to support a decrease in informal confrontation and an increase in the formal exercise of the RRDW – predicated on a broader base of non-confrontational collaboration in the workplace.

7.7 Conclusion

In the instance of a dangerous workplace the evidence is that workers do voice their concerns often with supervisors. This suggests there is considerable consultation and co-operation about unsafe working conditions outside the exercise of the RRDW. The formal exercise of the RRDW on South African mines is not yet the default position of individual workers when faced with a dangerous workplace. Workers report they are more likely to have been asked to leave a dangerous workplace by an H&S representative than make this call for themselves. Contract workers are the least likely to make this call.

The RRDW is a worker imperative and underpins worker self-regulation. The 'Guideline' issued by the MHSI with respect to the RRDW only partially addresses the short comings found in this research. For the future, of specific concern is whether worker elected H&S representatives can escalate OHS issues related to the RRDW to full-time H&S

representatives, and whether a dispute resolution mechanism reliant on technical advisors appointed with the support of the employer can effectively support workers to realise their right to a safe and healthy workplace. Arrangements for OHS self-regulation for workers are vulnerable to management perspectives in the absence of a strong regulatory steer by the MHSI. Yet legislation alone is no guarantee to enhancing worker safety. In what appears to be the predominant practise of consultation in the immediate workplace at the lowest level is where much non-confrontational collaboration and cooperation takes place. It is surely here where new answers to health and safety in mining by cooperating autonomous individuals are especially to be found.

Chapter 8

8. Discussion

South Africa's first report card on the Sustainable Development Goals' (SDGs) 169 targets is telling. SDG #8 "*Decent Work and Economic Growth"* is one of four SDGs for which the data is weak and therefore insight into what our understanding of what decent work looks like is limited (Fourie, 2019). The right to a work environment that is protective of our health and safety is, of course, critical to this.

The year 2019 is the centenary celebration of the ILO (1919 to 2019), for which the Global Commission for the Future of Work published a report detailing a transformative agenda for the ILO in the face of a rapidly changing workplace (International Labour Office, 2019). The swift introduction of automation, robotics and artificial intelligence will dramatically change expectations of the workplace. The 21st Century mining workplace will be overhauled by these developments too, which will have implications for mine health and safety, as workers are removed from working at the rock face and replaced by new technologies (Hermanus, 2017; Vogt and Hattingh, 2016). Certainly developments in South Africa seek to fast-track this change with the introduction of digital and other advanced technologies that will facilitate production decisions using real-time data at a central nerve centre on surface (Cawood, 2019). What this type of radical change will mean for worker representation has yet to be addressed within the South African industry.

The ILO's 2019 report provides a framework within which to grapple with this change by asserting a human face to the 4th industrial revolution (International Labour Office, 2019). While the report acknowledges the profound changes that have occurred to the global nature of work, such as, the increase in contract labour, informal work and the demise of organised labour, the Commission argues for the establishment of a *"Universal Labour Guarantee."* The purpose of the *"Guarantee"* is to assert the supremacy of basic working conditions for all workers regardless of their arrangements at work, which includes establishing workplace health and safety as a fundamental right at work, *"it is time for safety and health to be recognised as a fundamental principle and right at work."* (International Labour Office, 2019: 39). It also argues that the social compact and strategies to deepen local level democracy including at the workplace are central to building more stable and equitable societies and calls for public policies that promote collective representation and social dialogue (International Labour Office, 2019: 41) .Thus internationally there is a resurgence of interest in workplace health and safety and this thesis is, therefore, timely.

My thesis set out to examine the role of HSRs appointed under the MHSA (Republic of South Africa, 1996). Four papers are presented addressing specific aspects of their role. Paper 1 (Chapter 4) examined the experience of WHSRs (Coulson, 2018); Paper 2 (Chapter 5) the experience of the FTHSR in the management of safety (Coulson and Christofides, 2019); Paper 3 (Chapter 6) the experience of the FTHSR in relation to the triple disease burden on mines (Coulson and Christofides, 2020) and lastly, Paper 4 examined workers experience of the RRDW and the role of HSRs therein (Coulson et al., 2019).

This Chapter is an overarching narrative for the findings of this thesis. To achieve this, I revisit the conceptual framework introduced in Chapter 2. I highlight five central themes that have emerged from my research that fundamentally shaped worker representation and the role taken by HSRs, both within workplace arrangements at the mine site, and at the sector level between tripartite stakeholders. The evidence for these themes is drawn from the findings of the four papers presented in the thesis in Chapters 4, 5, 6 and 7. Where relevant these findings are examined against the agreements struck between organised labour and the employer in the site specific health and safety collective agreements, which were collected at each site as part of the document collection (but not reported on in the results Chapters 4, 5 and 6), and the occasional additional quotes taken from respondents. The themes are used to theorise a new model of worker self-regulation that has emerged on South African mines, which I term, *"incentivised self-regulation."* This model is then considered against the stance of organised labour in the four case studies undertaken for this research. Given the very poor industrial relations context in the South African mining sector some very preliminary thoughts about resistance politics for OHS and future of worker representation are raised.

8.1 Overarching themes emerging from the case studies

Figure 16 serves as a diagramatic summary of the major thematic findings from my research. By building on the conceptual framework (Refer to Figure 4, in Chapter 3) developed early in the research process, Figure 16 illustrates how five major themes shaped the mine workplace as experienced by HSRs

At the level of the mine site four themes dominated. Nestled at the centre of Figure 16 is the the HSR (both FTHSRs and WHSRs). Their position was found to be contradictory: Both compliant and effective with respect to worker representation but, also inadequate and contrary to the ethos of the law. Thus the central circle is found divided into two by a dotted line. A set of fragile power relations around HSRs made their role more complex. Figure 16

illustrates this with dotted black lines running between HSRs and the production teams they represent, and HSRs and the structures of organised labour. Lastly Figure 16 shows how the entire system of worker representation at the mine site was dominated by the employer illustrated by a white broken line around all the structures that are party to worker representation as described under the MHSA (Republic of South Africa, 1996). Specifically employer dominance extended to the mine health and safety committee, the position and role of the HSRs and their interface with first line supervisors, production management and the employer OHS system in general. The four workplace themes are discussed in the proceeding section, under the following headings:

- Theme 1: Partial compliance and HSR value
- Theme 2: Habitual dominance by the employer
- Theme 3: A fragile set of power relations
- Theme 4: Non-compliance and irregularities

At the sectoral level, one over-arching theme emerged which embraced policy and implementation gaps related to the internationally acknowledged pre-conditions for autonomous worker representation (Walters, 2006; Walters and Nichols, 2007). This theme is discussed at the end of this section under the heading, Theme 5: Policy and implementation gaps related to the pre-conditions necessary for worker representation. In Figure **16**, Theme 5 is shown in the outer boundary, in what had denoted the external tripartite stakeholders in the conceptual framework to this thesis (Refer to Figure **4**).

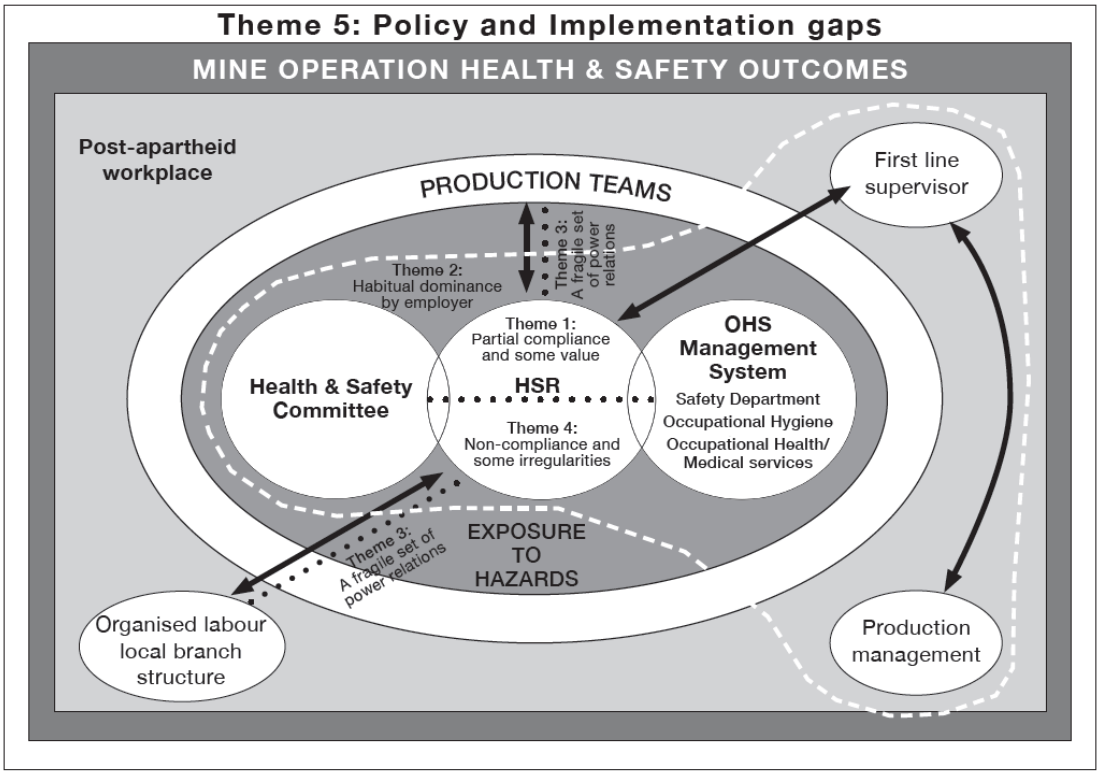


Figure 16: Thematic workplace and sector findings within the conceptual framework for case study research.

8.1.1 Theme 1: Partial compliance and the value of HSRs

Compliance with worker representation under the MHSA (Republic of South Africa, 1996) starts in the selection of HSRs, thus I begin my consideration of this theme by revisiting how respondents for my study had been selected/elected into their role as worker representatives. All WHSRs and FTHSRs respondents reported being selected in a manner that was compliant with the intentions of the MHSA and largely aligned with the health and safety collective agreements signed on site. This was suggestive of a large-scale mining industry (>500 employees on site) that adopted a compliance approach to the requirements of the MHSA with respect to the selection of HSRs, which was in keeping with the 2008 Presidential audit, that reported two-thirds compliance, with the major concern largely resting with small-scale industry (Department of Minerals and Energy, 2008). The majority of HSR respondents in this research were union members; 84% of WHSRs (Coulson, 2018) and all FTHSR respondents (Coulson and Christofides, 2019, 2020), which resonated with mining as a well unionised sector (Bhorat et al., 2014). This no doubt contributed to employer compliance with selection processes for HSRs.

Although not reported on in the results chapters, WHSRs reported being selected by co-workers usually through a show of hands facilitated by their immediate supervisor. No WHSR reported being selected by employers as has been found in other local studies, including one study in the health sector in South Africa (Kruger, 2012; Shaw, 2010). WHSRs stated that trade union representatives, however, were not commonly found in the workplace when the selection of the WHSR took place, although the health and safety collective agreement at one site required these elections to be facilitated by worker representatives. The appointment of an alternative WHSR who stood in for the HSR, when he or she was absent, is not a requirement of the legislation, but was a commonplace action of employers, keen to maintain compliance at all times (Coulson, 2018). All health and safety collective agreements at the four research sites made provision for the election of HSR alternates. WHSR respondents were compliant with the expectations laid out for HSRs under the MHSA (Republic of South Africa, 1996), having significant experience of the workplace (Coulson, 2018). Only at one case study site, did the mine health and safety collective agreement state that elected WHSRs in an underground workplace required at least 2 years underground experience, and if on surface, 6 months experience. In my sample, 56% of WHSRs had 2 or more years, experience in their current post, and only 16% reported less than 1 year of experience (Coulson, 2018:42).

FTHSRs were all elected through a process agreed with the employer and recognised trade unions set out in the on-site mine health and safety agreement too. Under these agreements nominated candidates were presented for election through a secret ballot. Potential candidates were either selected from amongst WHSRs, or from the general employee body. Elections were then held amongst WHSRs only, or with the general employee body. In general, there were very few requirements, placed on potential candidates in the collective agreements, the only commonplace requirement being that the candidate was literate in English. Health and safety collective agreements differed in some details, however, and at one site it was a requirement that the candidate was capable of chairing meetings and has Grade 10 education. Effectively meaning the candidate was not required to have a school leaving certificate which is Grade 12. At another site, it was a requirement for candidates to be evaluated against an established competency profile for lower band positions in the employer health and safety department. Candidates it was stated were to be reviewed against these criteria before they could be put forward for election. At this site the alternate FTHSR was elected by the mine health and safety committee, rather than by secret ballot among all employees too. All of which demonstrated that there were site specific details

about the implementation of the arrangements for worker representation. The reasons for these differences were not explored in this research, but underlying reasons could rest in the likely tussle by the employer for control over possible candidates for the FTHSR, put forward by organised labour.

A second broad area of compliance with the MHSA (Republic of South Africa, 1996) centred on the value of HSRs to OHS performance as reported in the literature ((Johnstone et al., 2005; Menéndez et al., 2008; Walters, 2006; Walters and Nichols, 2007). My thesis demonstrated that HSRs fulfilled a constructive role in mine OHS. I provided the only quantitative measure of this in the sector by finding that workers were more likely to withdraw from a dangerous workplace under the instruction of a HSR than of their own volition (Coulson et al., 2019). Qualitative data found that workers consistently referred to the WHSR before and after withdrawing from a workplace (Coulson et al., 2019). The operational activities of WHSRs described in Chapter 4 (Coulson, 2018) were satisfactorily categorised and largely aligned with a framework previously applied by Harris (Harris et al., 2012) in a study of New Zealand representatives. The day-to-day operational role of WHSRs, who put emphasis on their education and communication activities (Coulson, 2016, 2018), also aligned with global findings (Garcia et al., 2007; Harris et al., 2012; Ollé-Espluga et al., 2014).

The *"production and safety loop,"* described in Chapter 5 that relied on the two tier structure of WHSRs and FTHSRs was shown to have surfaced for safety management serious OHS transgressions and other production related problems, such as targets and bonus payments too (Coulson and Christofides, 2019). FTHSRs compensated for the employers inadequate communication with workers (Coulson, 2018; Coulson and Christofides, 2019). One safety manager having stating, *"if you take out….*[name of FTHSR] *there isn't a system."* (Coulson and Christofides, 2019:10).

Health promotion activities advocated by the employer also relied on the communication skills of HSRs (Coulson 2018; Coulson and Christofides, 2020). FTHSRs described taking health concerns to the employer, and in instances where the FTHSR went armed with information, this met with success (Coulson and Christofides, 2020). The independent compassionate voice of FTHSRs without doubt, meant that the individual health concerns and the needs of workers were more likely to be acted upon (Coulson and Christofides, 2020).

8.1.2 Theme 2: Worker representation is habitually dominated by the employer

The overwhelming narrative of this thesis is that the employer had successfully managed to dominate the system of worker representation at the heart of the MHSA. The unitary, rather than participative intentions, of the employer are a global concern (Nichols and Walters, 2009; Walters, Quinlan, et al., 2016a; Walters and Wadsworth, 2017; Wright and Spaven, 1999). Given the globalised neoliberal practices of large scale mines in South Africa, such as the increasing presence of contract labour, perhaps this is not a surprising finding (Forrest, 2015; Stewart, 2019). At site 4, the collective health and safety agreement revealed that on one shaft alone, there were more contractor HSRs and their alternates, than HSRs and alternates elected from among full time employees. The majority of production workers who participated in the focus group discussions from the platinum mines (sites 2 and 4) were also contract labour and not full-time mine employees.

The manifestation of employer dominance in South Africa was found to be severe. WHSRs faced *"creeping responsibilisation"* as they took on the perspectives and responsibilities of the employer (Coulson, 2018). FTHSRs and WHSRs were both found to take on inappropriate activities, specifically promoting the behaviour-based safety approaches of the employer (Coulson, 2018; Coulson and Christofides, 2019) and in responding to the health crisis that has emerged on South African mines, compensating for the employers' lack of investment in health (Coulson and Christofides, 2020).

The monopolisation of FTHSRs by the employer safety department found on all four case study mine sites, shaped their daily work schedule and activities as described in Chapters 4 and 5 of this thesis. It profoundly influenced the independence of FTHSRs (Coulson and Christofides, 2019, 2020). With respect to safety practice, FTHSRs were party to two closed loops of communication dominated by the employer that assisted the employer to prioritise production, over safety (Coulson and Christofides, 2019). Contrary to being the independent representative voice for workers for health, FTHSRs were a compassionate voice in the face of health related adversities (Coulson and Christofides, 2020). Their representative role being thwarted by the conspicuous lack of resources and veiled resistance by the employer (Coulson and Christofides, 2020).

The RRDW was not the default position of mineworkers concerned about a dangerous workplace either (Coulson et al., 2019). The employer dominated training about the RRDW and workers were found to be unable to differentiate between general safety rules and procedure for the RRDW (Coulson et al., 2019). There was partiality towards the employer in the guidance issued by the regulator in the settlement of disputes arising because of the

RRDW (Coulson et al., 2019). Contrary to the implementation of the right reflecting the historic victory for workers (Hermanus, 2019), there was some evidence that the right had become the employers' last option in their risk management strategy (Coulson et al., 2019). All of which would hamper the role of HSRs as intended under the MHSA (Republic of South Africa, 1996).

With the exception of site 4, all sites held regular mine health and safety committee meetings (Coulson and Christofides, 2020). Although my evidence was limited, FTHSRs were dominated by employer representatives in these meetings too, feeling both constrained in what they could say, and largely rendered passive by their daily reporting into the safety department (Coulson and Christofides, 2020). A review of the health and safety collective agreements showed that the employer was well aware of the intentions of the MHSA (Republic of South Africa, 1996). All health and safety collective agreements were explicit about the requirement for employee representatives to outnumber, or to be at minimum, equal to those of employer representatives. At one site, the FTHSR was to assume the position of co-chair of the mine health and safety committee. At two sites it was determined that health and safety committees should also be established for operational areas, as well as, for the overall mine site. The operational committees feeding into the overarching mine health and safety committee. Employee representatives in this case were to be selected from amongst the elected WHSRs. The translation of these agreements into practice was weak. Instead my research found FTHSRs were reported as passive and it was members of the UHSS, who were the dominant worker representatives in these structures (Coulson and Christofides, 2020). This was despite fairly detailed intentions for the mine health and safety committee and HSR participation being set out in collective agreements.

Further evidence of employer dominance becoming more entrenched was found in the new health and safety collective agreement being drafted at site 1, which had become necessary to make provision for AMCU, who were recently recognised at the mine site, alongside the well-established NUM. In the founding health and safety collective agreement (dated 1996) reference was made to the *"safety steward"* and the language appeared closer to the safety agreements NUM struck with large scale industry towards the end of the apartheid years (Leger, 1988). The 1996 agreement made provision for the *"safety steward"* to report to the employer safety officer, but only in relation to *"attendance at work, approval of absence from work, and adherence to the Company's conditions of employment."* The new, but still draft health and safety collective agreement stated that FTHSRs would be supervised by the Chief Safety Officer and that all HSRs (WHSRs and FTHSRs) were required to identify

potential hazards and risks to health and safety, record them in a book supplied by management and report to a supervisor, as soon as possible. The individual HSR only escalating a concern beyond the immediate supervisor, to other production and/or safety management if his or her OHS concern was not addressed at the primary level. The absence of any autonomy for worker representatives from the employer is clear evidence that the employer has convincingly seized the potential in the large numbers of HSRs on mines, to facilitate meeting gaps in their own health and safety management system.

8.1.3 Theme 3: A fragile set of power relations

The two-tier arrangements for HSRs is not an accepted feature of worker representation internationally, where most often there are much smaller numbers of worker representatives on site. Effectively FTHSRs who work from an office on the surface of the mine, have an immediate channel of communication into the workplace through WHSRs, who then have direct access to workers. However, despite this, fragile power relations beset the experience of both FTHSRs and WHSRs.

FTHSRs were isolated from a power base, in organised labour, but equally, inadequately engaged with their immediate constituency (WHSRs). When the NUM went to the Leon Commission in the early 1990s they considered the role of the FTHSR as pivotal to the success of worker representatives. The union motivated for one FTHSR per shaft, able to co-ordinate the activities of the WHSRs, chair the employee representatives on the mine health and safety committee and, in preparation for the successful functioning of this two-tier system of HSRs, participate in the training of the WHSRs (Leon, 1995a: 21). Although the MHSA (Republic of South Africa, 1996) could have been expected to lay the basis for the *"preferred model,"* the evidence presented in Chapters 4, 5 and 6 was that FTHSRs were isolated from organised labour and therefore the collectivism that underpins Chapter 3 of the MHSA (Coulson, 2018; Coulson and Christofides, 2019,2020). Only one of the FTHSR respondents described regularly reporting in to organised labour (this being the FTHSR at site 4, who was later appointed to the position of safety officer with the consequent role confusions, refer to the quoted dialogue in Box 3). Instead of finding a power base in organised labour, FTHSRs relied on the UHSS to act as their impromptu *"back-up"* (Coulson and Christofides, 2019:11). One health and safety collective agreement (site 3) conferred with this and stated that unresolved health and safety issues could only be referred to the branch committee of trade unions after all procedures had been exhausted. FTHSRs who were described by workers, as workplace *"observers"* (Coulson and Christofides, 2019:13) facilitated keeping organised labour away from health and safety matters by their passive

stance too. Workers being unable to differentiate the role of the FTHSR from that of management (Coulson and Christofides, 2019). Overall, the isolation of FTHSRs appointed under the MHSA, from organised labour, was a particularly disappointing finding of this research. Walters et al. (2018b) found FTHSRs and the UHSS in the coal sector who were unionised by the NUM reported getting support from regional and national trade union structures, which is contrary to the findings presented in my thesis. However, the report noted a sampling bias, given that all respondents were selected by the trade union (Walters et al., 2018b: 169).

Alongside access to a trade union, it was essential that FTHSRs had regular communication with WHSRs, and for WHSRs to meet with workers for the generous arrangements for HSRs to operate effectively. Where these meetings and co-ordination activities did not routinely happen, this presented a serious rupture to the two-tier system of HSRs. Collective agreements made provision for these meetings, but HSRs were unaware of this. For example, at site 1, the FTHSR were enabled to meet monthly with the WHSRs he/she represented to discuss health and safety in their workplace and that of the employees. At site 2, reporting relationships were set out requiring the FTHSRs to co-ordinate the activities of WHSRs. In the absence of such meetings it effectively made the task of being a WHSR impossible without an effective channel to escalate issues beyond the immediate workplace.

The MHSA (Republic of South Africa, 1996) section 31(2) makes provision for employees to meet their HSRs monthly to consider health and safety concerns too. This provision was also found in the site collective agreements. For example, at site 2 HSRs had permission to meet daily (not more than 15 minutes) with their constituency and once a month to meet for between 30-60 minutes at the beginning of a shift. At site 1, HSRs could call a mass meeting of workers. Production workers, in Chapter 5 stated that in spite of WHSRs putting the interests of workers first, they were powerless with respect to the prioritisation of production over safety, when confronted with supervisors who did not listen to them (Coulson and Christofides, 2019). Workers were critical of whether the HSR could get the workplace made safe once they had withdrawn from a dangerous workplace, either because the HSRs *"lacked powers or interpreted his or her role incorrectly,"* (Coulson et al., 2019:26). Workers believed you *"mustn't be scared of anything,"* to make a success of being a HSR (Coulson and Christofides, 2019:13), which has been reported in the coal sector too (Walters et al., 2018b).

8.1.4 Theme 4: Non-compliance and irregularities

Given the outward appearance of compliance, the serious violations with respect to worker representation were of concern, both those concerning the role of HSRs and those associated with the implementation of the RRDW. WHSRs faced the worst consequence of this, the *"creeping responsibilisation"* of their role, left WHSRs victim to personal consequence and employer retaliatory actions against them (Coulson, 2018). Being the WHSR was considered *"risky"* (Coulson, 2018:45). WHSRs were vulnerable to blame, intimidation by the employer and/ or workers, and discrimination as a consequence of their role. Increasingly workers did not want to take on the role of being the HSR (Coulson, 2018). All of which was entirely contrary to MHSA (section 83) which explicitly protects representatives from discrimination when acting in the role of HSR. A contributory factor was that WHSRs routinely referenced the MHSA incorrectly and were unaware of their powers under section 30 (Coulson, 2018).

Workers reported that the RRDW was open to abuse too, 35% of workers reported that the RRDW was used by workers as an excuse not to work (Coulson et al., 2019:25). This concurred with other studies where the right was used to bring employers' attention to wage demands outside the established negotiation mechanisms (Chinguno, 2015; Moodie, 2016) and used by workers to ensure they finished work early (Ndiweni and Rupprecht, 2019). Production workers also let WHSRs down. The target chasing of co-workers and supervisors left WHSRs accused of sabotage if he or she tried to block it (Coulson, 2018).

Alongside non-compliant practice, there were also irregularities that have arisen. These particularly concerned the introduction of incentives paid by the employer to underpin the activities of HSRs (Coulson and Christofides, 2019). Incentives were offered differently to WHSRs and FTHSRs. Financial incentives underpinned the role of some WHSRs (Coulson and Christofides, 2019). WHSRs being paid $17 per month at two sites to take on the role, while at the two other sites, there were OHS related prizes (Coulson and Christofides, 2019:13-14). One employer representative went as far to say that WHSRs were open to bribes, if not paid an adequate incentive (Coulson and Christofides, 2019). Incentives are well established in the pay package of mineworkers in South Africa (Makgetla and Levin, 2016; Moodie and Ndatshe, 1994). Bonuses for mineworkers are in some cases linked to safety performance alongside production targets, both in South Africa and internationally ((Fernández-Muñiz et al., 2017; Phakathi, 2019). Worldwide however, there appears to be no other evidence of HSRs being paid incentives by the employer and reflected the extent HSRs in South Africa feel they are indeed, working for and/or are incorporated into the employer health and

safety management system. Workers and WHSRs supported incentive payments (Coulson and Christofides, 2019). The weak position of WHSRs within workplace power relations was argued by one WHSR to be entrenched by their volunteer status.

"I would like it if people considered what we are doing as important, because they just tell us that we are just volunteering. You will find that the miner and the shift boss and the team doesn't take you seriously. They only want to get bonuses. They will call you malaisha [a very basic mine worker with a pick axe] *because you are just volunteering."* (WHSR site 1)

FTHSRs were not paid additional financial incentives on top of their basic salary although their successful election gave all FTHSR respondents a substantial pay increase (Coulson and Christofides, 2019). FTHSRs believed that the opportunity for them lay in the possible advancement towards being a safety officer. Most believed that there was a thin line between their role and that of a safety officer (Coulson and Christofides, 2019). At site 4, one FTHSR became a safety officer during the course of the research (Coulson and Christofides, 2019). In practice, the only realistic option for personal development for the FTHSR was to work for the employer, rather than the trade union, which is in keeping with the careerism of shop stewards described by others (Buhlungu, 2001; Buhlungu and Bezuidenhout, 2008; Moodie, 2016). Incentives, however, whether financial and/or career-enhancing were contributory to role confusion for all HSRs. Essentially HSRs were perversely incentivised to move away from their role as worker representatives, and towards a strengthened commitment to the employer. Either by being paid more, or by potential career advancements because of their representative role. In an exchange between one of the FTHSR respondents at site 4 and the researcher (refer to **Box 3**) the respondent describes his/her preference for the role of safety officer into which he/she had been recently appointed. The FTHSR describes several advantages to the new role that included the positive personal development that came with being appointed as a safety officer; the improved response from workers, as he/she was now in a position to more effectively respond to their concerns; and lastly, even his/her union activism was placed at the disposal of the employer, when the regulator, DMR-MHSI were on site.

Box 3: Exchange between a FTHSR and researcher site 4.

I(interviewer): So …if you were given the choice again ….., you can be a safety officer, or you can be a fulltime health and safety rep… which one would you choose?

R(respondent): *I would choose being the safety officer.*

I: What are the reasons for that?

R: *Well because there are more challenges as a safety officer and you learn more things, you need to do audits, do presentations, and attend meetings with management, especially safety meetings.*

I: Has there been any change in how the workers respond to you now that you're not the fulltime but the safety officer?

R: *Since I have been working with the workers as a safety officer, they were very happy, all the employees that I visited were very happy because each and every one of them wanted to tell me the problems that they have encountered on a daily basis and ask me for assistance in dealing with the situation because most of the complaints that come from underground would be maybe the shortage of material, somebody wants to go on leave as his leave is due and I would take all those complaints and sit down with an HR[human resources] coordinator to tell him that look, we don't want to risk this guy… this guy must go on leave as stated in the act that after 12 months a person must go and relax at home.*

I: So are you saying that workers respond well to you because you are able to process some of the things better as a safety officer rather than a fulltime?

R: *Exactly*

I: And how did the union respond, because I remember you told me that you were very involved with NUM… how did they respond when you were made a safety officer?

R: *The most important thing is that the workers know that I was a secretary of the union and they don't have fear of telling me all those complaints, so I still have that power to assist them using the union capacity, and I usually met with the union reps in the company and discussed those issues, and they're the ones who will take the management on those issues and resolve them all the time.*

I: So how do management feel that they have you now, and you are the safety officer, so you're part of the management team but you're also in a powerful position in NUM? How does management feel about you?

R: *Management is feeling very comfortable because somewhere, somehow they don't use me as a safety officer, they like to use me as a union rep especially when the inspector of mines is here, where there is no one who can represent NUM, then the management will be asking me to sit there as a union rep and not as a safety officer and they feel very comfortable.*

I: But how do you feel about that?

R: *I don't feel that it is a train smash, I like it, I feel it is very nice for me as long as we co-operate with each other.*

8.1.5 Theme 5: Policy and implementation gaps related to the pre-conditions necessitated by worker representation

Policy and implementation gaps emerged at the sectoral level that spoke to the pre-conditions (Refer to Box **2** in Chapter 2) that are internationally acknowledged to be necessary to underpin the implementation of the *"preferred model"* (Walters, 2006; Walters and Nichols, 2007). This research confirmed the absence of an appreciation of the pre-conditions by South African tripartite stakeholders. All of the policy and implementation gaps stemmed from an inadequate explanation in the sector with respect to the role and activities of HSRs, and scant appreciation that representatives need to be autonomous of the employer. This absence of understanding was not isolated to the employer, but also found within the actions of the regulator towards HSRs. Two substantial gaps existed in the South African context. The first is a policy gap and the second the current training provision for HSRs.

Robens (1972) at the time of his Commission, acknowledged that talking between tripartite stakeholders without the necessary action would not be enough, recommending that arrangements should be described in a code of practice and that, *"Above all, the code should stress that simply talking together about safety and health is not enough. It is essential to ensure that active follow-through of the measures is discussed."* (Robens, 1972: 22). Mandatory guidance written in co-operation with organised labour and issued by the DMR-MHSI was repeatedly referenced in the discussion in the results in Chapters 4, 5 and 6 to be

a significant gap that should be closed (Coulson, 2018; Coulson and Christofides, 2019, 2020). Specifically, the activities of both tiers of HSRs (Coulson, 2018; Coulson and Christofides, 2019) and the health-related role of HSRs, given the health emergency on South African mines requires careful consideration (Coulson and Christofides, 2020). Related to this the resourcing of HSRs, including access to monitoring equipment and the internet should be subject to minimum standards (Coulson and Christofides, 2020).

This study collected indicative evidence about the role of the inspectorate in relation to worker representatives. I found no evidence that HSRs in South Africa were routinely supported by inspectors, which is in keeping with global studies (Garcia et al., 2007; Johnstone, 2009; Walters and Wadsworth, 2016). Even where pro-worker, mandatory guidance had been issued in the sector related to the implementation of the RRDW, Chapter 7 described how the regulator had written themselves out of the dispute mechanism in the event of workers refusing dangerous work, and as a consequence have created a partiality towards the interests of the employer (Coulson et al., 2019). This resonated with descriptions of Canadian inspectors who made themselves less available to worker representatives by dealing with work refusals over the phone (Lewchuk et al., 2009). Walters et al. (2018b: 162) found FTHSRs and the UHSS on South African coal mines did meet with inspectors when they were on site but did not feel confident to request an investigation by the inspectorate because this would be considered as *"disloyal"* to the employer. Contrary to the ethos of the MHSA (Republic of South Africa, 1996), inspectors were found to regularly make the position of the FTHSR more difficult, because they too, did not understand the HSR role, and made them feel responsible, alongside the employer, for OHS transgressions (Coulson and Christofides, 2019). FTHSRs reported feeling intimated by inspectors when asked to account for workplace OHS violations (Coulson and Christofides, 2019). The pressure for HSRs to get things right for the regulator was palpable, and even the employer at one site, commented that the imposition of a Section 54 by the inspectorate was avoided if the HSR had completed his/her log book (Coulson and Christofides, 2019). The ambivalent actions of the inspectorate actions towards HSRs fed into perceptions of trade union representatives that the regulator was not on their side. The UHSS reported the inspectorate was ineffective and did not consistently take firm action against mine management (Coulson and Christofides, 2019). At one site it was also suggested by the UHSS that the regulator was vulnerable to corrupt practices (Coulson and Christofides, 2019).

This study showed that the training of HSRs has remained a challenge since the promulgation of the MHSA (Republic of South Africa, 1996). The appointment of an

alternative WHSR who stood in for the HSR, when he or she was absent, was a commonplace action of employers, keen to maintain compliance at all times (Coulson, 2018). One outcome of this, is that the number of HSRs in the sector requiring training is high, creating a significant challenge within the sector for worker representation. I found there was significant turnover in the appointment of HSRs too. These changes make the management of HSR training even more onerous. Thus, it should be concluded that both the delivery and the content of the training is inadequate.

Largely the South African trajectory has mirrored global experience, labour education approaches adopted by the NUM during the apartheid struggle years were marginalised once pluralist arrangements entered onto the statute, a reflection of the global OHS bureaucratisation and depoliticisation described in other studies (Frick, 2013; Storey, 2005; Walters, 1997). In the early 1990s, at the Leon Commission, the NUM requested for HSRs to receive at least 5 days of training annually (Leon, 1995a: 21). HSRs in this study reported considerably less than this quota of training, some WHSRs reported receiving no training (Coulson, 2018). WHSRs were found to be unable to report a uniform experience of their preparation for their role, and secondly, were unable to reference the law correctly. Citing section 22 rather than their powers under section 30 (Coulson, 2018). Even after attending training, WHSRs were routinely unable to get their concerns taken seriously (Coulson, 2018). In Chapter 6, FTHSRs appeared to have a better grasp of their advocacy role for health and safety than had previously been reported (Coulson and Christofides, 2020). However, they had not adopted the *"knowledge activism"* of counterparts in the industrialised world, as a counter to the dominance of the employer under neoliberalism (Hall et al., 2006, 2016). In Chapter 7, workers had marked gaps in their understanding of the RRDW, being unable to distinguish between safety rules and RRDW procedure and were largely unaware that the RRDW had application in the event of health, as well as, safety hazards (Coulson et al., 2019). The newly drafted health and safety collective agreement at site 1 reflected the necessity to strengthen and make more responsive HSR training in the contemporary workplace. It stated that alongside the present MQA skills programme for HSRs, a FTHSR requires training in basic computer skills, mine planning, strata control and/or other relevant technical education, thermal measurement and gas testing.

8.2 A new model of incentivised worker self-regulation

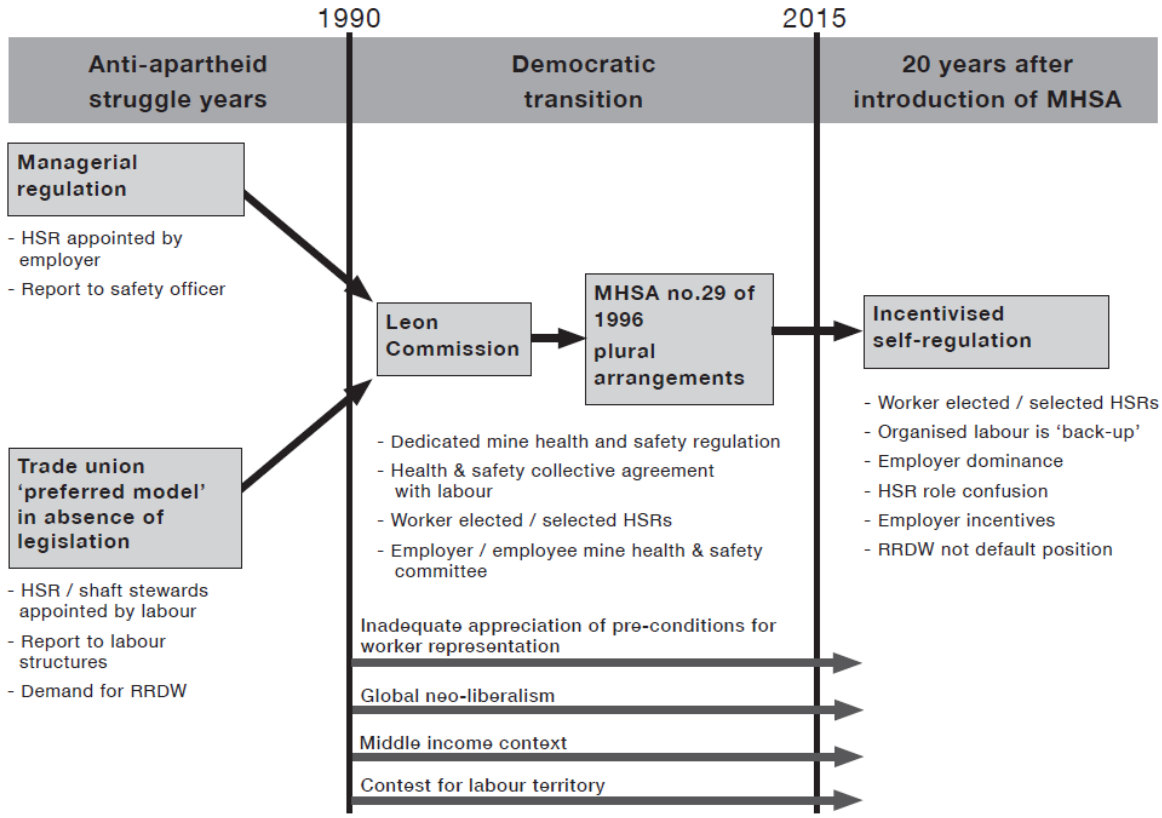


Figure 17: Background to the emergence of incentivised self-regulation for worker representation in mine OHS.

The findings of this thesis have shown that the characteristics of the present model of worker representation were shaped by aspects of worker organisation, such as the democratic election and selection of HSRs by workers, but ultimately were dominated by the employer, who offered financial and other incentives that perversely strengthened HSR commitment to the employer and weakened their relationship with organised labour. Figure **17** summarises the features of the new model of worker self–regulation that has emerged on South African mines, which I term *"incentivised self-regulation."*

Historically this model was preceded by two other approaches to worker representation, both of which arose towards the end of the anti-apartheid struggle years; *"managerial regulation"* introduced under new mining regulations in 1988 (Department of Energy and Mineral Affairs, 1988) and the safety agreements secured by the NUM, which were negotiated to stand in stark contrast to the employer dominated arrangements under the then, newly passed regulations (Leger, 1988). The safety agreements reflected the

"preferred model," labour elected representatives albeit without the supportive regulatory steer (Leger, 1988).

Figure **17** illustrates how during the democratic transition, on the recommendation of the Leon Commission (Leon, 1995), the MHSA (Republic of South Africa, 1996) was ushered in. This marked the first opportunity on South African mines to introduce the *"preferred model"* of worker representation with the necessary steer from legislation and the regulator (Walters and Nichols, 2007). Twenty years on from the promulgation of the Act, my thesis found that the preferred model has not found full expression, but rather a distortion of the intentions of the MHSA has taken root. While the results of my thesis are suggestive of the positive value HSRs can and do play in the mine workplace, the dominant narrative is of HSRs who were unable to act autonomously. Within *"incentivised self-regulation"*, organised labour function as adhoc back-up to representatives appointed under the MHSA (Coulson and Christofides, 2019). Specifically, WHSRs were regularly in an untenable position between their constituency and the production supervisor. The scramble for representatives to be taken both seriously, and/or to have the difficulty of their position acknowledged fueled the demand for WHSR payment (Coulson and Christofides, 2019).

The underlying reasons for the emergence of the new model of worker representation have been explored in Chapters 4, 5 and 6 (Coulson, 2018; Coulson and Christofides, 2019, 2020). Figure **17** highlights the prominence of these underlying reasons during the years of democratic transition. Specifically, the combined impact of an inadequate appreciation of the pre-conditions necessary to support worker representation (Walters, 2006; Walters and Nichols, 2007); the impact of globalised neoliberal work practices, specifically the increase in contract labour (Forrest, 2015; Stewart, 2019); and, the socio-economic realities of South Africa (Anand et al., 2016; stats SA, Republic of South Africa, 2019). Chapters 5 and 6 underscored the effect of gross unemployment, the down turn in mining and the high disease burden (Coulson and Christofides, 2019, 2020). What has not been adequately explored in this thesis is the stance of organised labour to the current model of worker representation.

8.3 Incentivised worker self-regulation and trade unions

The history predating the introduction of the MHSA was one of anti-apartheid labour struggle, of which the NUM was the largest and by far the most powerful union (Butler, 2007; Leger, 1988; Stewart and Nite, 2017). Health and safety was central to the union mobilisation for membership, the then Secretary General Secretary of NUM stated *"you*

have got to be alive to earn wages…" (Cyril Ramaphosa quoted in (Zwi et al., 1988). Buhlungu (2010) reminded us that activism post-apartheid has been shaped by individualism, and upward social mobility, rather than the building of a mass organisation that characterised the struggle years. Thus the position of labour, and especially that of the NUM related to worker representation in health and safety post-apartheid, begs some examination.

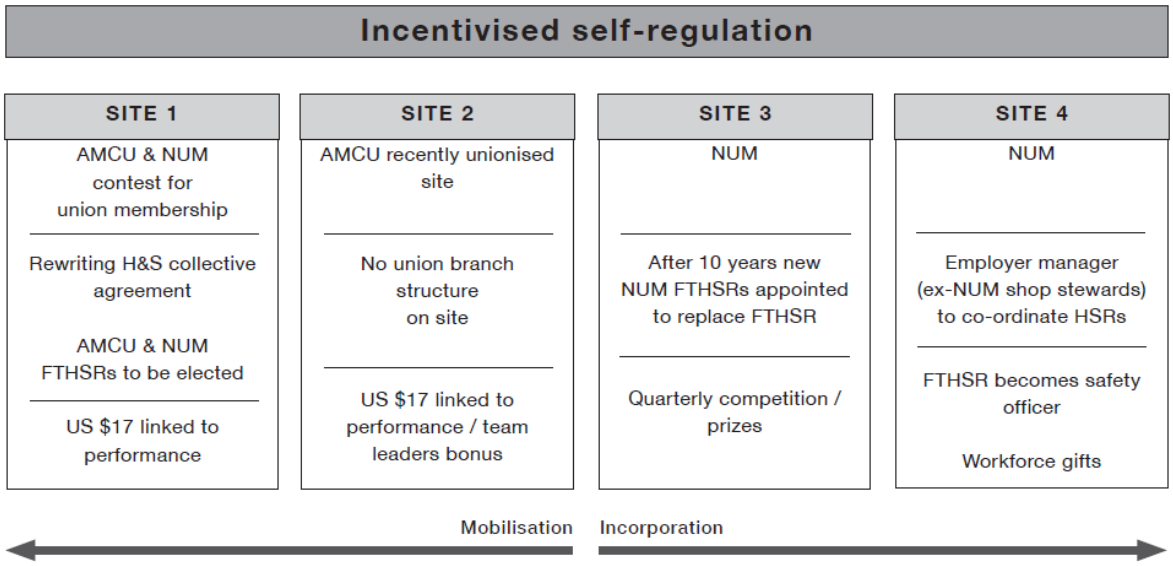


Figure 18: Incentivised self-regulation and the position of organised labour at four case study sites.

Figure **18** summarises the position of labour and the specific characteristics of "*incentivised worker self-regulation"* at my four case study sites. Two distinct characteristics can be seen. While sites 1 and 2 were grappling with recent trade union 'mobilisation' having had mineworkers recently join AMCU; the long established and unchallenged presence of the NUM on sites 3 and 4, had resulted in a close relationship between the trade union and the employer which manifested in a display of 'incorporation.'

Site 1 (gold) had a long-established relationship with the NUM since the democratic transition in 1994 (the health and safety collective agreement being dated 1996), but had during the research period experienced a successful bid by AMCU for labour territory, taking membership away from the NUM. During the time of my research, AMCU took control of one shaft at the mine. This development precipitated the rewriting of the mine health and safety collective agreement to accommodate the recognition by the employer of AMCU, on site. This was unprecedented and there is very limited experience of accommodating two major unions in one site specific health and safety collective agreement. Specifically, the

new health and safety collective agreement required that questions about the number of FTHSRs and their membership of respective trade unions should be resolved (note this was not resolved during the research period). Inter-union rivalry that undermined mine health and safety practice was evident at the site too, as found by others (Stewart, 2019; Walters et al., 2018b). FTHSRs (site 1) described inter-union rivalry as *"dirty politics"* and *"shifting the focus from what we are supposed to do."* Concrete problems arose for FTHSRs because membership of a rival union was used as a reason for workers not to co-operate.

"A simple thing [personal protective equipment] *PPE… we use the goggles every time when we go into the shaft…….now when you say to somebody please use your PPE ……. he will say to you what are you going to do with me, you think that this is NUM…*" (FTHSR site 1)

Financial incentives were reportedly paid to WHSRs, estimated at $17 per month linked to HSR compliance with the completion of employer distributed incident books (Coulson and Christofides, 2019). At site 1, there was considerable discrepancy between, what the NUM, and AMCU union representatives, believed was fair compensation; AMCU believing compensation should be set much higher (Coulson and Christofides, 2019), which aligned with AMCU's more aggressive demand for wage increases in the last decade (Chinguno, 2015; Sinwell, 2015).

At site 2 (platinum) there were a significant proportion of workers who were contract staff. The mine was newly unionised by AMCU, and at the time of the fieldwork, there was no union branch structure on site, although there was one union shop steward. Financial incentives were reportedly paid to WHSRs which were linked to the bonus of the team leader, but also estimated by respondents to be around $17 (Coulson and Christofides, 2019).

Although the findings at sites 1 and 2 were that AMCU had successfully claimed labour territory from NUM, no evidence emerged to suggest that mobilisation for trade union membership was any longer centred around improved OHS for workers, which is in keeping with global findings (Barry and Loudoun, 2006; Loudoun and Walters, 2009). Mobilisation strategies of the NUM were not in evidence and had certainly become delinked from OHS, post-apartheid. Although there was no evidence in this thesis for AMCU having introduced the incentive payments, it would be interesting to explore where these had originated. AMCU, conceivably may have claimed a little of the mobilisation territory through a localised agenda pursuing payments for HSRs, although this requires investigation. As a possible strategy, it is closer to the union's record of insurgency, informal worker organisation and

more radical wage demands and improved remuneration (Sinwell, 2015). For example, independent worker committees in the platinum sector were successfully established around occupations, specifically to make demands for wage increases (Moodie, 2016; Stewart, 2013). Additional payments to HSRs, especially in platinum regions are, as likely to have arisen through informal associational networks, as through any formal trade union position.

The NUM had a consolidated presence on sites 3 (diamond) and 4 (platinum). Contrary to the narrative of trade union mobilisation and OHS, these sites demonstrated the neo-corporatist and institutionalised position of the NUM post-apartheid (Alexander, 2013; Chinguno, 2015). Site 4 was the most obvious example of the type of incorporation for which NUM has been criticised (Botiveau, 2017; Chaskalson, 2016; Chinguno, 2015). The employer having appointed a former shop steward into a management role to co-ordinate HSRs on the employer's behalf. It was also the site at which the union activist, became a FTHSR and then a safety officer (Refer to Box 3). Production workers (site 4) spoke about the cosy relationship between the trade union shop stewards and the employer, recognising that they were no longer in a position to represent worker interests. The employer co-ordinator of HSRs described the working relationship between the NUM and the employer as being in a *"family."*

"The management and the union are living together. They have lunch together. How can they represent us? They are friends these people." (Production worker site 4)

"These two guys [mine managers] have worked together with us for so many years and we were working as a family, NUM and management, that's why we have achieved so many things…." (Safety Representative Co-ordinator/Manager site 4)

Site 4 provided evidence that the careerism of NUM shop stewards had penetrated health and safety structures under the MHSA (Republic of South Africa, 1996). This in all probability contributed to social distance emerging between workers and their representatives, as has been found by others (Chinguno, 2015; Moodie, 2016; Webster and Buhlungu, 2004).

At site 3, the FTHSR had been in post for nearly 10 years, serving three terms as the FTHSR, and was considered close to the employer and distant from the trade union. The NUM branch decided to reclaim a more direct interest in the position of FTHSR, and new elections for two FTHSR positions which took place during the research period involved trade union nominations only. It demonstrated that within the NUM, alongside shop steward careerism

and neo-corporatism, there was also interest to recover their role in the HSR system under the MHSA (Republic of South Africa, 1996). Walters et al. (2018b) found that NUM shop stewards in coal mining recognised that for FTHSRs to be effective they needed to be trade union appointments. The recent commitment of the NUM to redesign, and to be actively involved with the delivery of training to HSRs is also evidence of positive developments within the trade union towards improved worker representation.

8.4 Worker representation and the poor industrial relations climate

The evidence presented in these case studies is of a very poor industrial relations climate in South Africa. Essentially a set of relationships between the key role-players that were characterised by low trust and weak structures for workplace democracy. Production workers were sceptical about the powers of HSRs (Coulson, 2018; Coulson et al., 2019; Coulson and Christofides, 2019), FTHSRs were unable to operate autonomously of the employer and the trade union was adhoc back-up to statutory HSR appointments (Coulson and Christofides, 2019, 2020). Although it should be noted that the exception to the low trust environment was found in Chapter 7, in the study of the RRDW where workers turned first, to their supervisors for important information, which may indicate improvements in supervision practice related to production (Coulson et al., 2019). Given the poor industrial relations context, I use this section to make some observations about resistance politics for OHS and to provide some very preliminary thoughts about the shape of worker representation for the future.

8.4.1 Resistance politics

A tension has arisen in the literature about the implications of the poor industrial relations climate for worker representation. Gunningham and Sinclair (2012) argue that the collapse of trust between stakeholders has rendered pluralist arrangements dysfunctional. Believing that pluralist arrangements rely on a degree of co-operation between the employer and employee representatives. Certainly it is one explanation for the current dysfunctions of the mine health and safety committee given the hostile industrial relations context on South African mines. However a more compelling argument for South Africa is the emergence of new strategies of resistance that are happening globally despite the adversarial nature of industrial relations. Walters and Quinlan et al. (2016a) and Hall (2006; 2016) have shown that the effectiveness of representatives is not determined by a conducive industrial relations context, but rather by the strategies employed by representatives to resist the employer that remain rooted within workplace collectivism.

Although the UHSS was not the direct focus of my study, some evidence arose in my case studies that points to the importance of this structure. These structures having taken shape under the agreements struck by the NUM in the 1980s for safety stewards and shaft committees (Leger, 1988). Bischoff et al. (2018) describe how historically in the 1980s struggle years, shop-steward committees emerged as the central communication channel between workers and management, fashioned on similar structures in the UK where adversarial industrial relations were commonplace. Bischoff et al., (2018) describe how employers during the 1980s engaged with shop steward structures in order to avoid union action.

"Where there was strong shop steward presence, management tended to consult with shop stewards committees before taking any major decisions affecting workers, if only to prevent repercussions from the union." (Bischoff et al., 2018:3)

Respondents in my study described the engagement between the employer and the UHSS as adversarial and the employer used the UHSS to bring in changes that affected workers. In-depth interviews conducted with the UHSS and with employer OHS representatives, especially the senior safety officer and occupational hygienist at case study sites revealed the cautiousness of the employer in introducing new changes without the agreement of the UHSS, as opposed to the HSRs appointed under the MHSA (Republic of South Africa, 1996). The introduction of new PPE was the primary example of this. Meetings between the employer and the UHSS were frequently described as highly conflictual. Even the UHSS at site 4, where the NUM had a close relationship with the employer, exercised considerable influence over the activities of the employer OHS officials.

"*So he* [UHSS] *says he doesn't like these gumboots, he wants them off the shaft, they are not the right thing. So I say to him okay. Oh first of all when I get there he calls in the section manager, the engineer and one of the Chief Safety officers, now he's hijacked me to a meeting. ……*

So I said but how can you tell me that I need to change all the gumboots and you haven't got proof, ……So they don't gather data, 2 or 3 people maybe came in there, but now remember we are changing 3500 gumboots and maybe 3 or 5 people are unhappy ….

… they don't want to go underground with those boots, they are going to stop their people from going underground if they have these boots. They say there wasn't a good enough trial period and all and so how I resolved this… was that while we were in the meeting with these

guys, I stopped the delivery of those types of gumboots to the shaft, just that specific shaft, and I told our PPE supplier that they will not supply us these gumboots until further notice and I said to the chairperson that we will do a trial of… we will take a bigger sample."
(Occupational hygienist, site 4)

Trade unions are not, therefore, precluded from refashioning the politics of resistance in a hostile labour relations climate, as has been found globally (Hall et al. 2006, 2016; Walters and Quinlan et al., 2016a). The health and safety structure first introduced under the shaft agreements brokered by the NUM in the 1980s has remained relevant (Leger, 1988) and can with additional resourcing and training for members, almost certainly play a more influential role in OHS strategy. In fact, the membership and arrangements for shop stewards, who are part of these structures was found in the mine site health and safety collective agreements on case study sites. Presently the UHSS can easily be undermined, by being under prepared in their engagement with the employer, although their influence is considerable.

For the future, the most pressing action for organised labour is to reclaim the autonomy of HSRs appointed under the MHSA from the employer and to re-establish the link back into trade union collectivism. Walters et al. (2018b) found a proactive relationship existing between FTHSRs and the NUM in coal mining. My thesis, largely does not concur with this, although the more recently NUM appointed FTHSRs at site 2 was evidence to the contrary. Overall my research found ad hoc trade union support to HSRs and very little formal reporting into trade union structures (Coulson and Christofides, 2019; 2020). There is some urgency for trade unions to understand the implications of failing to claim regulatory mechanisms in the collective interests of worker health and safety. Where this does not happen, these become open to abuse. There is some evidence in the sector that regulations related to the RRDW, for example, have been abused and are open to abuse (Coulson et al. 2018; Moodie, 2016; Ndiweni and Rupprecht, 2019). Organised labour should revisit provisions in the existing legislative framework, and specifically the mine site health and safety collective agreement, should become a living and breathing document for worker representatives. There is a missed opportunity for organised labour by not bringing to the fore, the document that describes the fundamental commitment to worker solidarity on which all the arrangements for worker representation (HSRs, the mine health and safety committee and the UHSS) are premised.

The tendency of trade union OHS strategy to individualism by servicing the legal and other individual membership needs in highly industrialised countries (Fairbrother, 1996; Walters,

2011) was not the dominant South African narrative. Instead it was the '*careerism"* of the NUM officials (Buhlungu, 2001, 2010; Buhlungu and Bezuidenhout, 2008; Moodie, 2016) and the support for employer incentive payments for individual HSRs which undermined the collectivism in support of worker representatives appointed under the MHSA (Coulson and Christofides, 2019). The NUM through their renewed commitment to train their HSRs is making promising moves to reclaim the agenda for worker representation, because HSRs will be directly linked to workplace collectivism in their preparation for the role. The entry of the more *"workerist"* trade union NUMSA into the mining sector may assist to facilitate this too, with their overt agenda of workplace democracy (Byrne and Ulrich, 2016).

Given employer dominance, ensuring that representatives have the necessary powers to act effectively in their role is important and representatives in Australia and Sweden have powers to issue improvement/infringement notices to the employer (Frick, 2013; Johnstone, 2009; Walters, Johnstone, et al., 2016). Worldwide these powers, alongside those powers to withdraw workers from a dangerous workplace, or to halt work are used very cautiously by HSRs (Frick, 2013; Garcia et al., 2007; Hilgert, 2013; Trägårdh, 2009; Walters, Johnstone, et al., 2016). Workers used the RRDW in South Africa cautiously too (Coulson et al., 2019). Trade union shop stewards were found to side with the employer to get a mine open and producing, when issued with a Section 54, mine closure, from the MHSI (Coulson and Christofides, 2019), suggesting that union representatives would be very circumspect in the issuing of infringement/improvement notices. It is therefore my opinion, that improved powers for HSRs would be premature without attending to their autonomy from the employer first.

8.4.2 The future of worker representation

The finalisation of my thesis has occurred at a moment when the future of organised labour is under enquiry (Webster 2019). While there are actions that can be taken to strengthen the current arrangements for HSRs, these are increasingly under threat from far more rapid changes that will dominate mining into the future. The first is the rapid escalation in contract labour that has the potential to render representative arrangements on mines increasingly ineffective (Frick, 2013; Gunningham, 2008; Loewenson, 2001; Tui McKeown, 1997). Of serious concern is the consistent finding that contract workers are vulnerable on South African mines (Coulson et al., 2019; Forrest, 2015; Stewart, 2019). AMCU very recently stated that workers are not using the RRDW because they fear being retrenched and replaced (Grant, 2019). The second change is the push to modernise and thus transform mining operations in South Africa (Hermanus, 2017; Vogt and Hattingh, 2016).

Within the workplace multi-trade union strategy may become necessary to protect health and safety rights and to close the social distance that has emerged between trade union officials and their membership. The ILO *"Universal Labour Guarantee,"* is helpful in this regard by providing an international labour framework for new approaches and alliances to emerge that can support workplace health and safety. On site 1, the entry of the major trade union AMCU alongside the NUM was unprecedented. The present arrangements under the MHSA, Chapter 3 (Republic of South Africa, 1996) do not make clear the provisions for this. A sector wide commitment to collaborative trade union strategies around health and safety is needed and the Labour Caucus at the MHSC is an avenue for this type of engagement. Forthright leadership will be necessary to challenge the hostile rivalry on mines between AMCU and the NUM that spills into health and safety as found in my research and others (Stewart, 2019; Walters et al., 2018(b)).

Formal tripartite structures under the MHSA (Republic of South Africa, 1996), specifically the MHSC and MQA, have not proved able to provide the necessary leadership for mine modernisation (Hermanus et al., 2019). My study suggests that at the mine operation, the mine health and safety committee is regularly biased in favour of the employer, and that members of the committee would be unlikely to make the necessary connections between the structural changes to the business and the new agenda for health and safety (Coulson and Christofides, 2020). An alternative mechanism for new forms of engagement for worker OHS representatives is found under Chapter 5 of the Labour Relations Act No. 66 as amended (1995)(Republic of South Africa, 2002), which makes provision for participatory or co-operative structures in the workplace between employers and employees through Workplace Forums. These Forums can only be established by the Commission for Conciliation, Mediation and Arbitration (CCMA), on request by a trade union. Essentially Workplace Forums were introduced to enable a shift from adversarial to more co-operative participation but under arrangements which gave trade unions some control. To date this type of *"institutional transfer"* has not experienced success in South Africa (Bischoff et al., 2018:7). However, the mechanism is an alternative model for co-operation between several labour organisations because, the Workplace Forum is open to all employees. The Workplace Forum can engage with a range of structural issues associated with business production, including new work methods, restructuring, retrenchments, job grading, education and training (CCMA, 2002). The mandate of the Workplace Forum is pertinent as South African mines enter an intensive period of modernisation, involving significant contraction and reskilling of the labour workforce and a very new spectrum of health and

safety issues (Vogt and Hattingh, 2016; Cawood, 2019). To that extent the Workplace Forum is a more promising platform. However, given the resistance to Workplace Forums by trade unions (Bischoff et al. 2018) it may be left to a national tripartite body, such as the National Economic and Labour Council (NEDLAC) to argue the potential for Workplace Forums to support mining transformation. Like other tripartite structures in South Africa, NEDLAC has not effectively forged a social compact and many issues have stalled because stakeholders are unable to move beyond their differences (Hermanus et al. 2019). Thus the difficulty of securing an effective platform for both multi-trade union and/or trade union and employer engagement should not be underestimated.

In South Africa it is not only contract workers, it is the jobless and informal workers who are desperately in need of health and social protection and whose rights are routinely violated (Webster and Buhlungu, 2004; Webster and Englert, 2019). Stewart (2019) argues that informal mineworkers and communities whose health and safety is jeopardised by mining operations are badly in need of OHS representation. In fact, the MHSA section 5(2)(b) makes the employer responsible for any health and safety impacts of the mining operation, including those on the surrounding community (Republic of South Africa, 1996). This provision is poorly understood by organised labour and there are no examples in the sector of action against the employer under this provision. The opportunity for new mobilisation strategies is substantial. There are many cases of informal mineworker and community struggles related to health and safety violations (Benchmarks Foundation, n.d.; Harvard Law School International Human Rights Clinic, 2016; Johnson, 2016; Stewart, 2019). The necessity for representation is certainly not diminished, nonetheless a renewed determination to protect the health and safety of the most vulnerable demands that changes should be made. Paradoxically a return to a modified form of the outward looking, *"social movement"* trade unionism (Moodie, 2010; Von Holdt, 2002) that proved massively successful for the NUM in the apartheid struggle years may provide a way ahead.

8.5 Limitations and strengths

The hostile context of mining added to the complexity facing me in the design and set up of my study. It directly affected the set-up of the case study sites. I had decided not to select my case study sites based on specific trade union membership, which was the entry to respondents in the smaller study of HSRs in coal mining, undertaken recently by Walters et al (Walters et al., 2018b).

Instead I positioned myself as the non-partisan researcher with respect to the major rivalry between the NUM and AMCU. During the selection of case study sites, two non-participating sites ultimately rejected the study, because of the unwillingness of trade union representatives on site to co-operate. At one site, trade unionists felt they had been through a process of consultation with their employer to improve the conditions and address the challenges faced by HSRs. It was believed that the case study research, whilst very valuable, may interfere with the delicate stage at which these consultations had entered. The demands of HSRs at this site were shared with me by the Health and Safety Manager with the permission of organised labour. They included for example the demand for incentive payments for WHSRs, which was a finding in my subsequent case study research too, refer to Chapter 5 (Coulson and Christofides, 2019). A second proposed case study site, also rejected the research. In this instance, organised labour took offense at the language of the employer's Safety Officer who inadvertently suggested shop stewards from organised labour *"were not important."* Meaning in this instance, to say, that my study was focused on FTHSRs, rather than shop stewards per se. Given everyone in the room was speaking in a second language, other than myself as the researcher, the potential for misunderstanding was great. This small error could not be rectified within the context of extreme mistrust between employer and worker representatives. One by one, the shop stewards left the room citing the employer's lack of respect, for their departure. This incidence coming at the beginning of my fieldwork under scored the importance of thinking carefully about how to structure my research process within such a fragile set of relations. One such decision was to interview shop stewards at the end of my research time on case study sites to avoid organised labour placing pressure on HSRs not to participate, should difficulties arise, and/or I fell unwittingly into the middle of a dispute, between the employer and organised labour.

Gaining permission to visit each case study site at least four times to conduct interviews also had to be timed carefully. Tthere were obstacles getting back onto sites for follow-up interviews. Obstacles caused considerable delays and extended the research period from 12 months to 18 months in most instances. Delays included mine closures, such as in the event of mine fatalities, and the DMR-MHSI issuing a section 54. Other delays were incurred because of DMR-MHSI audits and inspections. At site 2, the health and safety manager grew less co-operative and for an extended period of time did not provide permission for me to be back on site.

64% of WHSRs in my study worked underground (Coulson, 2018), although I had hoped the study respondents would only work underground. However, the realities of pulling

mineworkers out from production work made this an impossible target. It was made even more unlikely given the significant changes within respondent body. Of the WHSRs (n=25) enrolled in my study, six of this number were retrenched and one representative resigned from the position; Of the FTHSRs (n=10) enrolled in my study, one of this number died, one became a safety officer and one was replaced by newly elected candidates (Refer to Chapters 5, 6 and 7). The fluidity of the respondent population was not foreseen and was a learning of this research.

There are some very big gaps in complementary data that would assist with providing a more complete picture of worker representation in the mining sector. There are gaps with respect to studies that investigate the perceptions and experiences of shop stewards and the UHSS. Similarly the functioning of the mine health and safety committee in South Africa is undocumented. The experience and approach of the regulator to worker representation is also unknown. The Chief Inspector having to always provide permission for interviews with the inspectorate which makes the approach to the inspectorate more complex.

Walters et al. (2018b) limited case study in coal mining presented a more positive picture of worker representation than was found in my case studies in gold, platinum and diamond mines. Coal mining might be expected to have a markedly more positive experience given coal mines are smaller, with a smaller number of representatives on site, are mechanised, and there is some evidence of a different culture and level of co-operation between the employer and trade unions (Hermanus and Coulson, 2007). The MCSA have reported for some time that safety performance on coal mines is on a par with that of the United States (Phakathi, 2016). Open cast and small mines were not considered for this study, although they are subject to the same legislation.

There were considerable strengths to the case study approach. The repeat visits did establish rapport between the researchers and the HSRs. This assisted with data collection. Overtime the researchers felt confident about the constancy of the narrative that was arising from each site. Collecting information from more than one source also provided perspective to the HSR experience on mines. The 18 month data collection period ensured there was adequate opportunity to consider what constituted an enduring association, as opposed to a spurious observation.

Telephone interviews also helped establish relationships and put researchers in touch with respondents' world, but did not reveal very much additional information useful to the study, thus these were largely restricted to first six months only.

Chapter 9

9. Conclusion and recommendations

Very few African states have ratified IL0 C176, six states in total (ILO, 1995). The South African experience of the arrangements for worker representation under C176 adds to their credibility across the continent, as large scale mining continues to remain important (African Union, 2009). The global trade union, IndustriALL has launched a campaign for the more widespread ratification of C176 across the continent.

In South Africa, the dominance of the employer over HSRs, corresponded with that of employers globally; neoliberal policies profoundly impacting on middle-income economies too. There were many overlaps between what HSRs across the globe have described as their foremost experience of the employer, with the voices of representatives in this study. Certainly my thesis confirmed that arrangements for worker representation cannot be left to legislation alone, and that it is paramount that attention is also paid to the necessary *"pre-conditions"* for worker representation (Walters and Nichols, 2007). Trade union membership on South African mines was high (Bhorat et al., 2014). Despite this representatives appeared more systematically dominated by the employer than their counterparts in highly-industrialised economies. In a middle income context, adequate resourcing for HSR training and specific regulations that clarify the role of representatives, supported by sympathetic enforcement are crucial.

A trend within the trade union movement globally towards individualism, rather than collective mobilisation for OHS was observed among South African mining trade unions too, but for an entirely different set of reasons. These were either because of the careerism of trade union representatives to work for the employer (Buhlungu, 2001, 2010; Buhlungu and Bezuidenhout, 2008; Moodie, 2016) or, because trade unions were lending support to the incentive payments made by the employer to HSRs (Coulson and Christofides, 2019). The positioning of the two major trade unions therefore, strengthened the hand of the employer in the arrangements for worker representation, by weakening the autonomous position of HSRs appointed under the MHSA (Republic of South Africa, 1996). The *"incentivised self-regulation"* described in this thesis could not have emerged without the co-operation of organised labour. Thus, I conclude that the stance of both the employer and trade unions post-apartheid have contributed to undermining the intended system of worker representation.

The ILO *"Universal Labour Guarantee"* (International Labour Office, 2019) provides an opportunity for tripartite stakeholders to re-examine the basic right to health and safety in

the workplace. Presently there is very limited appreciation of what this could, or perhaps should look like given the resource constraints and the challenging socio-economic conditions in middle-income contexts. However, in spite of the hostile industrial relations environment, there are distinct opportunities for organised labour. Provisions in the existing legislative framework should be revisited by organised labour, specifically the mine site health and safety collective agreement should become a living and breathing document for worker representatives. A new labour discourse in Africa is taking root through the mobilisation of the most disadvantaged including contract labour, informal workers and the unemployed. This, alongside mechanisms for multi-union solidarity, and a shift towards more left leaning democratic practice in the workplace, present an opportunity to build a response to the challenges of mining in Africa (Bischoff et al., 2018; Byrne and Ulrich, 2016; Webster and Buhlungu, 2004; Webster and Englert, 2019).

There is a dearth of research about worker representation in South Africa and in Africa, in general. As more workplaces contribute directly to global supply chains, workers well-being worldwide and labour solidarity will benefit from considering the experiences beyond those of highly-industrialised countries only. While there are commonalities, there are also unique features to worker representation outside of the high-income environment, many of which are not fully understood. For example, the role and activities of HSRs in South Africa were uniquely fashioned by the extra-ordinary disease burden (Coulson and Christofides, 2020). My thesis is a very early contribution to the academy in this area.

9.1 Recommendations to strengthen worker representation under the MHSA No.29 of 1996 as amended

Recommendations to strengthen worker representation are valuable given the resurgence of interest in workplace health and safety (International Labour Office, 2019). Worker representation being accepted within global literature to positively contribute to health and safety outcomes (Johnstone et al., 2005; Walters, 2006; Walters and Nichols, 2007), and given that the Global Union, IndustriALL have embarked on a campaign to improve the adoption of ILO C176 across Africa (IndustriALL, 2019).

The recommendations made here address HSRs appointed under the MHSA (Republic of South Africa, 1996). The recommendations are cognisant of the limitations of this study. For the record, a detailed exploration of the role of HSRs and shop stewards in investigations and inquiries that take place because of fatalities and serious injury, or health related incidents, was not a focus of this study, and neither was the role of worker representatives in compensation claims, and other disputes that many arise with respect to fitness to work. The experiences of HSRs on small mines was excluded from this study too.

Recommendations that follow are made to organised labour, to the DMRE-Mine Health and Safety Inspectorate (MHSI) and to the statutory tripartite institutions of the Mine Health and Safety Council (MHSC) and the Mining Qualifications Authority (MQA). Thereafter a set of recommendations are made with respect to additional publications and research that arise as a consequence of this thesis.

9.1.1 Organised labour

The following actions are proposed for consideration by organised labour to revitalise their relationship to HSRs, and to reinvigorate the role of trade unions in worker representation as had been the intention under the MHSA (Republic of South Africa, 1996).

9.1.1.1 A multi-union forum for worker representation be established

A multi-union forum be established to consider the present and future challenges faced by worker representatives. This forum could be established and funded under the auspices of the MHSC, as one component of the existing labour caucus of the Council.

This forum would be well positioned to consider major developments facing worker representation into the future including all of the following:

1) The role of HSRs within the two tier structure**.** The intention behind the two tier arrangement is not optimised and organised labour should provide guidance to representatives about their respective roles. Training accredited through the MQA,

should be aligned with the role of representatives under the guidance of organised labour, and with the necessary enforcement by the DMRE-MHSI;

2) A labour campaign to end the ubiquitous employer intimidation, discrimination and recriminations experienced by HSRs;
3) Strengthened arrangements for worker representation given the increased precariousness of the mine workforce as contract labour is now commonplace;
4) Worker representation for health and safety within the context of labour contest for territory;
5) The payment of financial and other incentives to HSRs by the employer;
6) Career pathing for full-time HSRs and shop stewards who are members of the UHSS;
7) The ILO's positioning of health and safety in the workplace as a human rights issue (International Labour Office, 2019);
8) Worker representation in mine health and safety for the future, given the modernisation programme of the industry.

9.1.1.2 The mine health and safety collective agreement to be reclaimed by organised labour as the key document underpinning worker representation

The mine health and safety collective agreement underpinning pluralist arrangements on a mine site should be the determining mandate at a mine site level to underpin to the arrangements and role of organised labour and HSRs in health and safety.

This agreement, mandatory under the law (MHSA section 26) was found to be infrequently referenced by HSRs and the UHSS, but their mandate (section 30 powers), resourcing and the commitment of the employer (section 31(3)) are found therein. The health and safety collective agreement also describes when and how often HSRs meet with their constituencies. The review of health and safety collective agreements at the four case study mines found that the employer is well aware of the contents of the law in the drafting of these agreements, but in practice they go unreferenced for years, and HSRs are unable to hold the employer to account or understand their own mandate.

9.1.2 DMRE-Mine Health and Safety Inspectorate

The actions of the DMRE-Mine Health and Safety Inspectorate are inconsistent with respect to HSRs appointed under the MHSA (Republic of South Africa, 1996). The following actions are recommended to ensure the DMRE-MHSI acts in a manner compatible with the intentions of the MHSA for worker consultation.

9.1.2.1. A mandatory guideline for the preparation, resourcing, role and reporting of the two tier system of HSRs

Mandatory guidance issued by the DMRE-MHSA is a compliance matter for mines. It is recommended that guidance on the implementation of the two tier system of HSRs be issued by the inspectorate which will form an addendum to the mine health and safety collective agreement. The addendum will address the preparation, resourcing, role and reporting of elected or employee selected representatives. The new guidance will strengthen the arrangements for HSRs described under the health and safety agreement in a fashion similar to the requirements issued for the RRDW, which saw recommended procedure for the RRDW as a mandatory component of the mine health and safety agreement (Department of Mineral Resources, 2016(b)).

It is noted that the election or selection of representatives is adequately described under the MHSA (Republic of South Africa, 1996) and further description about this process is not recommended.

The new mandatory guidance should include together with the powers and functions accorded to worker representatives under the MHSA, section 30, clarification with respect to:

1) Arrangements for the regular access of FTHSRs and WHSRs to their constituencies to address worker OHS concerns and to provide feedback;
2) The reporting structures for HSRs with respect to their constituencies, organised labour and to the employer;
3) A list of documentation to be made available to HSRs. The procedure for the request of additional documentation from the employer;
4) The procedure for HSRs to request technical assistance with employer support;
5) The contact details for HSRs to contact the regional offices of the DMRE-MHSI;
6) An annual programme of the mine health and safety committee meetings at which HSRs may make representations to the employer;
7) A list of activities for WHSRs and FTHSRs aligned with their functions as found under the MHSA;
8) Training commitments to newly appointed HSRs and FTHSRs to ensure adequate preparation for their role;
9) The resourcing of FTHSRs and WHSRs to fulfil their role.

It is recommended that the resourcing of HSRs with respect to access to computers, cell phones/airtime and the internet should be subject to a set of basic minimum standards. As well as, use of an office and transport arrangements for representatives working across shafts on very large mines. Equipment and training for basic exposure reading should also be made routinely available to FTHSRs, and to WHSRs on request.

9.1.2.2 Mandatory guidance about the role and functioning of the mine health and safety committee

A second guidance document should be issued with respect to the mine health and safety committee. The functioning of this committee is poorly understood and should be the focus of sector wide research prior to the development of such guidance. Current evidence is that it functions largely in the interest of the employer (Coulson and Christofides, 2020; Walters et al., 2018). The inspectorate is urged to make a formal request through the MHSC for research that can be used to determine the framing of mandatory guidance.

9.1.3 Mining Qualifications Authority

The Mining Qualifications Authority established under the MHSA is the body responsible for skills programmes in the mining sector and is tasked to meet with the MHSC where skills development is integral to health and safety (Republic of South Africa, 1996). The training suite offered to worker representatives should be strengthened, simplified and diversified. Although progress has been made through the MQA to improve the delivery of training to HSRs, the present short comings do not prepare a representative for the role as intended under the law (Coulson, 2018; Tuchten, 2011). The following recommendations are made to the MQA.

9.1.3.1 Changes to the Skills Programme MQA/SP/0120/10

Training for representatives should primarily focus on the preparation of HSRs to understand their powers under the MHSC. Presently the Skills Programme MQA/SP/0120/10, Health & Safety Environment (SHE)(Mining Qualifications Authority, 2015) offered to HSRs is overly focused on the representatives understanding the employer OHS system. The following recommendations are therefore made with respect to the Skills Programme MQA/SP/0120/10:

1) The programme should be simplified and HSRs offered a 5 day basic training offered under the existing unit standard, **SAQA 259622**: Describe the functions of the workplace health & safety representative (Mining Qualifications Authority, 2015).
2) New materials to strengthen the teaching of Unit Standard **SAQA 259622**: Describe the functions of the workplace health & safety representative (Mining Qualifications

Authority, 2015) should be commissioned and urgently made available to accredited training providers.

9.1.3.2 Minimum standards for training practice

A minimum standard for HSR training should be set across the sector that is then made enforceable under guidance issued by the DMRE-MHSI. These standards should address not only the minimum requirement for training, but the essential role of trade unions in the training of worker representatives.

1) It is proposed that all HSRs should complete unit standard **SAQA 259622**: Describe the functions of the workplace health & safety representative (Mining Qualifications Authority, 2015) within three months of appointment.
3) The centrality of trade unions to the arrangements for worker representation must be restated in the present training offer. The value of labour education approaches in HSR preparation should be recognised and supported. Trade unions should be enabled by the MQA to lead or contribute to the teaching of unit standard **SAQA 259622**: Describe the functions of the workplace health & safety representative (Mining Qualifications Authority, 2015).

9.1.3.3 Additional training for HSRs and UHSS

New training for worker representatives is necessary if HSRs and the UHSS are to meet their mandate under the MHSA.

1) The MQA should make additional training available to FTHSRs and the UHSS to be offered at a regional level, by drawing worker representatives from across mine sites. This training should address their role as required at the mine health and safety committee, in investigations and inquiries and during compensation and related claims. These courses should be accredited at NQF Level 4 which is at the level of a school learning leaving certificate at Grade 12. All these courses must be made available on an annual basis in all mining regions.

2) Training for worker representatives in South Africa should be regularly benchmarked against that offered in other mining countries.

9.1.4 Mine Health and Safety Council

The MHSC is the statutory tripartite body established under the MHSA to advise government on mine health and safety (Republic of South Africa, 1996). This is an important body in the sector and it can provide leadership in the sector with respect to the promotion and

protection of pluralist arrangements on mines. It is recommended that the Council take the following actions in the interest of worker consultation in mine health and safety.

9.1.4.1 New resources for worker representatives

Worker representatives lack resources for their role (Coulson and Christofides, 2020). The following new resources are recommended:

1) A handbook on the role of HSRs and shop stewards be prepared for distribution across the sector. This booklet prepared in user friendly language including translations, will describe HSR and shop steward functions and powers, reporting, the resources available to them and the support provided to representatives through organised labour, the employer and the DMRE-MHSI. The handbook will include advice to HSRs and shop stewards appointed or working with small mines;
2) Handbook to be provided free to all HSRs and the alternatives on appointment;
3) The access of HSRs and the UHSS to updated and reliable OHS information be improved. This should involve both print and digital platforms that enable real time information exchange between worker representatives, technical specialists and the DMRE-MHSI.

9.1.4.2 A sector-wide campaign to end discrimination faced by worker representatives

1) A sector-wide campaign to end employer intimidation, discrimination and recriminations faced by HSRs to be led, and reported on by the MHSC. Integration of this campaign into the 'Culture Transformation Framework' (Mine Health and Safety Council, 2011b) should be considered.
2) The MHSC to facilitate workshops in mining regions to orientate mining stakeholders to the intentions of the MHSA for worker consultation and the role of HSRs and the UHSS.

9.1.4.3 Research and new guidance

1) MHSC to work in partnership with the DMRE-MHSI to develop mandatory guidance relating to the role and resourcing of worker representatives and the mine health and safety committee (Refer to recommendation 9.1.2.1)
2) The resourcing by the employer of peer-education programmes in large mining workplaces should be reviewed in the light of the current role played by worker representatives. The triple disease burden has markedly added to the complexity of the mine workplace (Balfour-Kaipa, 2016; Baloyi, 2019; Coulson, 2018; Coulson and Christofides, 2020). Presently HSRs are compensating for the inadequate investment by the employer in workplace health in African countries burdened by hyper-

epidemics of communicable disease and a growing burden of non-communicable disease (Coulson and Christofides, 2020).

3) A study be commissioned of mineworkers' understanding of the provisions provided for worker consultation and worker rights under the MHSA, and their basic OHS training. Thereafter recommendations be made about how to strengthen workers' understanding of their health and safety rights in the mine workplace.

9.2 Recommendations with respect to research

There is considerable scope for further studies to consolidate findings related to worker representation in health and safety. Throughout this thesis significant research gaps have been highlighted. There is substantial scope for a new area of enquiry to emerge. For example, this thesis has been limited to mining, but similar arrangements for HSRs are found under the OHSA (Republic of South Africa, 1993). For example, the construction and agricultural sectors are both areas of industry in which fatalities and serious injury are not uncommon (Department of Employment and Labour, 2019).

My thesis has provided important formative insight into the experiences of HSRs on mines today. There is now scope to test these finding across the sector as a whole and a quantitative survey addressing the selection, preparation and activities of HSRs appointed under the MHSA with respect to their powers would provide a useful benchmark from which to track developments for representatives. Although for the future, more attention should be paid to worker representatives who are contract labour, because this is now commonplace in the sector.

Our understanding of the role taken by shop stewards is less well developed. Qualitative studies that document the role of shop stewards in disputes and claims associated with poor health and in investigations and inquiries that arise because of fatalities and serious incidents, is undocumented. Workers being found unfit for work, for example, is escalating on mines (Balfour-Kaipa, 2016; Department of Mineral Resources, 2017).

The role of OHS is underplayed in the historical narrative of the mobilisation of organised labour on mines which contributes to a gap in the literature about the changed stance of labour in South Africa to OHS. That South African trade unions currently no longer use OHS as a mobilising focus is in keeping with studies globally (Barry and Loudoun, 2006; Loudoun and Walters, 2009). However, new challenges have emerged such as the payment of incentives by the employer to maintain compliance with the requirements for worker

representation under the MHSA (Coulson and Christofides, 2019); and the challenge presented by more than one majority trade union on a mine site given the violent trade union rivalries (Chaskalson, 2016; Stewart, 2019). The opportunity for new forms of multi-union collectivism centred on mine OHS emerges because of the breakdown of NUM's hegemony in the sector (Mahlakoana, 2017b). This is new direction of research enquiry and future policy development that my thesis provides context for. Similarly the nexus between health and safety both inside, and outside a mine has become clearer as community struggles have had more visibility and new models of organisation take shape.

The structure and functioning of the employer/employee mine health and safety committee has not been the focus of a study in the sector and this is a significant gap in our understanding of how consultation between employers and employee representatives as conceived under the MHSA functions in practice. My thesis is suggestive and found that these committees functioned outside the mandate of the Act (Coulson and Christofides, 2020).

Lastly this thesis has not thrown any light on the experiences of representatives in small scale mining. Global studies find that HSRs in small business are captured by the employer OHS system (Walters and Wadsworth, 2017). Representatives in small business are often best supported by a system of roving representatives (Frick, 2009)). Currently there is no provision for this under the MHSA, yet informal mining is growing rapidly (Johnson, 2016; Stewart 2019).

9.2.1 Future publications arising from the thesis

Data from both my case study research and the concurrent mixed methods study can support a number of proposed publications:

1. *System dysfunctions*: *The duplication and rupture of the safety system on South African mines and the constraints to worker self-regulation regarding the right to refuse dangerous work (Coulson, N. and Stewart, P)*

This paper was presented at a WORKinMINING event, The Micropolitics of Mining Capitalism at Liége University, Belgium 11-13 September 2019

Abstract: Via the presentation of empirical data, this paper develops the metaphor of social autopoiesis to explain the safety system on South African mines. The mine safety system comprises two closed loops of structured communication. The first loop relates to Workplace Production and Safety. This communication loop regulates mine safety in production and

involves the interaction of the mine health and safety department, production supervision, worker health and safety representatives (HSRs) and work teams. The second loop relates to and regulates Compliance and Enforcement and involves the Mine Health and Safety Inspectorate (MHSI), the employer's occupational health and safety (OHS) system and the trade unions' health and safety structures (UHSS), as well as HSRs This paper aims to show how the two distinct, interdependent, yet self-referential and self-regulating subsystems, each corresponding to its own environment, represents an effective rupture within the overall tripartite mine safety system. This duplication effectively separates operational production politics from the political tripartite relations between the state, capital and labour. The paper draws on work that explored the implementation of the right to refuse dangerous work (RRDW). It compares and contrasts worker and supervisor perspectives of the RRDW. The aim was to explore how the interactions between these two occupational groups illustrated the functioning and dysfunctions of the mine safety system and the consequences for autonomous, individual worker self-regulation.

HSRs are severely constrained in both escalating their safety concerns to the legal-political level or meaningfully able to challenge the source of safety dysfunctions in the workplace. HSRs are hence constrained to act autonomously as legally intended under the Mine Health and Safety Act No. 29 of 1996. Although HSRs are most often the individuals who trigger the implementation of the RRDW, the consequent communications were those that embedded the dysfunctional communication loops in the mine workplace.

2. *Incentivised self-regulation and health and safety representation on mines in democratic South Africa (Coulson, N. and Christofides, NJ)*

This paper will be framed around the discussion found in this thesis in Chapter 8. The paper will introduce the developments in South Africa with respect to worker regulation from the 1980s, through the democratic transition and into the post-apartheid arrangements under the MHSA as described in my thesis. The paper will describe how the specific context of middle-income South Africa shaped the implementation of *"preferred model"* for worker representation and the stance of African trade union movement to this.

3. *Health emergencies and communication dysfunctions on South African underground mines (Coulson, N and Christofides, NJ)*

The devastating impact of silicosis as a result of over a century of gold mining in South Africa is widely acknowledged in the mining literature (McCulloch, 2016; Hermanus et al., 2019;

Murray et al., 2011; Rees et al., 2010), but the current triple disease burden is only more recently finding expression in the response of the sector to mine health and safety (Baloyi, 2019; Coulson and Christofides, 2020; Mine Health and Safety Council, 2015). The health of local communities is negatively impacted by mining too (Benchmarks Foundation, n.d.; Harvard Law School International Human Rights Clinic, 2016; PHRU, 2017). Using socio-autopoiesis as a theoretical frame (refer to the results in Chapter 5 (Coulson and Christofides, 2019)), the role-players in health are shown to display communication dysfunctions that ensure an inadequate response by health professionals to what remains a health emergency on South African mines. The policy and legislative gaps that perpetuate this are then considered.

4. *The National Union of Mineworkers shades of activism for occupational health and safety: Mass mobilisation to neo-corporatism.*

This paper will be written in collaboration with Professor David Walters who completed indicative research about the role of NUM HSRs and shop stewards in mine health and safety on South African coal mines (Walters et al., 2018).

The NUM played a pivotal role in securing pluralist arrangements on South African mines. This paper will trace the history of NUM mass mobilisation in the gold and coal sectors in South Africa. The emergence of shop steward careerism and neo-corporatism post-apartheid and the related impacts on HSRs and the UHSS will be described using both my case study research and findings from the study completed by Walters in the coal sector (Walters et al., 2018). The steps taken more recently by the NUM to reclaim autonomy from the employer for worker representatives will be examined given the rapidly transforming context given the likely trajectory for mine modernisation and informal mining.

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Appendices

APPENDIX 1: Ethics certificate

APPENDIX 2: Table: The MHSA No 29 as amended: Legal requirements for the selection, appointment and role of health and safety representatives

Case study research

APPENDIX 3: Letter to mine manager & criteria for the selection of HSR respondents

APPENDIX 4: Information sheet & consent form: Health and safety (H&S) representatives

APPENDIX 5: Information sheet: H&S professionals

APPENDIX 6: Information sheet: Representatives of organised labour

APPENDIX 7: Research tools quarter 1

APPENDIX 8: Research tools quarter 2

APPENDIX 9: Research tools quarter 3

APPENDIX 10: Researcher tools quarter 4

Concurrent mixed methods study

APPENDIX 11: Participant information sheet & consent form

APPENDIX 12: Research tools

Published papers

APPENDIX 13: Paper 1 (Chapter 4)

APPENDIX 14: Paper 2 (Chapter 5)

APPENDIX 15: Paper 3 (Chapter 6)

APPENDIX 16: Paper 4 (Chapter 7)

APPENDIX 1: ETHICS CERTIFICATE

M140701

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)

CLEARANCE CERTIFICATE NO. M140701

NAME: (Principal Investigator)	Ms Nancy Coulson
DEPARTMENT:	School of Public Health Medical School
PROJECT TITLE:	Case Studies of the Underground Work and Practice of Health and Safety Representatives Appointed under the Mine Health and Safety Act No. 29 of 1996 as amended
DATE CONSIDERED:	25/07/2014
DECISION:	Approved unconditionally
CONDITIONS:	
SUPERVISOR:	Dr Nicola Christofides
APPROVED BY:	Professor PE Cleaton-Jones, Chairperson, HREC (Medical)

DATE OF APPROVAL: 29/08/2014

This clearance certificate is valid for 5 years from date of approval. Extension may be applied for.

DECLARATION OF INVESTIGATORS

To be completed in duplicate and **ONE COPY** returned to the Secretary in Room 10004, 10th floor, Senate House, University.

I/we fully understand the conditions under which I am/we are authorized to carry out the above-mentioned research and I/we undertake to ensure compliance with these conditions. Should any departure be contemplated, from the research protocol as approved, I/we undertake to resubmit the application to the Committee. **I agree to submit a yearly progress report.**

3-10-2014

Principal Investigator Signature M140701Date

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES

APPENDIX 2: TABLE LEGAL REQUIREMENTS FOR THE SELECTION, APPOINTMENT AND ROLE OF THE HEALTH AND SAFETY REPRESENTATIVES APPOINTED UNDER THE MHSA No 29 as amended

Source	Comment
Chapter 1 of the MHSA	
Section 1(d)	The MHSA has as one of its objects: the provision of employee participation in matters of health and safety through health and safety representatives and the health and safety committees at mines
CHAPTER 2 of the MHSA	
Section 7(1)((d)	Every employer must consider an employee's training and capabilities in respect of health and safety before assigning a task to that employee
Section 10	The employer must provide employees with any information, instruction and training or supervision that is necessary to enable them to perform their work safely and without risk to health; every employee must become familiar with work-related hazards and risks and the measures to control those hazards and risks. The employer must ensure that every employee is properly trained to deal with every risk to the employee's health or safety
Section 11(5)(c)	Every employer must conduct an investigation in co-operation with the health and safety representative responsible for the working place in which the investigation takes place
Section 11(5)(e)	Employer must deliver a copy of the investigation report to the health and safety representative if there is no health and safety committee
Section 11(7)	If there is no health and safety committee at a mine , the consultations required in this section must be held with the health and safety representatives
Section 23(1)(b)	The employee has the right to leave any working place whenever the health and safety representative responsible for that working place directs that employee to leave that working place
Section 23(2)(a)	Every employer must determine effective procedures for the general exercise of the rights, and those procedures must provide for notification of supervisors and health and safety representatives of dangers which have been perceived and responded to
Section 23(3)(a)	The consultation required must be held with the health and safety representative if there is no health and safety committee
CHAPTER 3 of the MHSA	
Section 25(1)	Every mine with 20 or more employees must have a health and safety representative for each shift at each designated working place at the mine
Section 26	Collective agreement: must include (a)the designation of working places; (b)the number of full-time health and safety representatives;

	(d) the terms of office of health and safety representatives and the circumstances and manner in which they may be removed from office; (c) election or appointment of health and safety representatives; ; (e) the manner in which health and safety representatives must perform their functions in terms of the MHSA;
	(i)The facilities and assistance that must be provided to a health and safety representative in terms of section 31(3); (j) the training of health and safety representatives
Section 26(6) Section 26(7)	When no representative trade union, the employer must endeavour to reach agreement on the number of full-time health and safety representatives at the mine When no registered trade union, the employer must endeavour to reach agreement on the number of full-time health and safety representatives at the mine
Section 26 (8)	Disputes on number of full-time health and safety representatives, to be referred to the CCMA.
Section 27 (1)	Collective agreement in place: employer must designate working places at the mine in accordance with the agreement
Section 27(2)	No collective agreement: every working place at the mine is designated; No health and safety representative is responsible for more than 100 employees; No health and safety representative is responsible for more than 50 employees if the designated working place include separate working places.
Section 28	Qualification of representatives: Be employed in full-time capacity in the designated working place Be acquainted with conditions and activities at the designated working place. To qualify as a full-time health and safety representative: Be employed in a full-time capacity at the mine Comply with any other qualification which may be agreed by a health and safety committee or prescribed
Section 29	Election and appointment of representatives: (1) The employees at a designated working place may elect from among themselves health and safety representatives (2) the employees at a mine may elect from among themselves any full-time health and safety representatives that may be agreed or determined by the collective agreement (3)Election to be conducted in the prescribed manner (4) Employee elected to be appointed by the employer in prescribed manner
Section 30	Rights and powers of representatives: • Represent employees on all aspects of health and safety • Direct any employee to leave any working place if circumstances arise at the working place • Identify potential hazards and risks to health and safety

	• Make representation or recommendation to the employer or to a health and safety committee on any matter affecting the health and safety of employees • Inspect any relevant document which must be kept in terms of the MHSA • Request relevant information from an inspector • With the approval of the employer, be assisted by or consult an adviser or technical expert • Attend any meeting of a health and safety committee • Request an inspector to conduct an investigation • Participate in consultations on health and safety with the employer or an inspector • Participate in any health and safety inspection and in any internal health and safety audit • Inspect working places with regard to health and safety • Investigate complaints by any employee relating to health and safety • Examine the causes of accidents in collaboration with the employer • Visit the site of an accident • Co-operate with the employer in the conducting of investigations and participate in inquiries • Perform functions agreed by the health and safety committee; or prescribed. NB. The rights and powers apply to health and safety representatives only in respect of the working places for which they are responsible
Section 30(3)	If a health and safety representative requests information or reports from an inspector, the inspector must supply the representative with the information or reports in their possession
Section 30(5)	A health and safety representative intending to exercise the right to inspect working places must give the employer reasonable notice of the inspection and permit the employer to participate in the inspection
Section 30(6)	Health and safety representatives are entitled to perform their functions and to receive training during ordinary working hours
Section 30(7)	Any time reasonably spent by a health and safety representative for a purpose in (6) must be considered for all purposes to be time spent carrying out the employment duties of that representative
Section 31(1)	The employer must pay every full-time health and safety representative appropriate remuneration at least equal to the remuneration the representative earned immediately before being appointed as a full-time health and safety representative
Section 31(2)	The employer must provide time and facilities for employees to meet monthly with their health and safety representatives in order to consider health and safety in their working places and reports by the representatives on the performance of their functions
Section 31(3)	The employer must provide health and safety representatives

	• with the facilities and assistance necessary to perform their functions • training that is reasonably required to enable them to perform their functions • time off from work, without loss of remuneration, to attend any training course that is agreed or prescribed
Section 31(5)	On the completion of a term of office as a full-time health and safety representative, the representative is entitled to employment in the same position held immediately before being appointed or employment in a position that is at least as favourable as the position held immediately before the appointment.
Section 32	Every employer must notify the health and safety representatives in good time of inspections, investigations and inquiries of which an inspector has notified the employer, and, as soon as practicable, of any accident, serious illness or health-threatening occurrence, or other dangerous event
Section 34(3)	A health and safety committee must consist of at least four employee representatives which are to be appointed by the health and safety representatives
Section 34(5)	No more than two of the employee representatives may be appointed from full-time employees who are not health and safety representatives, unless all of the health and safety representatives have been appointed to the committee and there are still employee committee positions to be filled.
Section 35	The employee and employer representatives on a health and safety committee must each elect a chairperson from their number
Section 36(e)	A health and safety committee may agree on additional qualifications or functions of health and safety representatives
Section 36(i)	A health and safety committee may take reasonable time to report on meetings of the committee to the health and safety representatives at the mine
Section 38	A health and safety representative must not disclose any information that is private personal information relating to an employee
Section 39	The commissioner of the CCMA must balance the harm that disclosure is likely to cause to an employee or employer against the harm that the failure to disclose the information is likely to cause to the ability of health and safety representatives to perform their functions effectively
Chapter 4 of the MHSA	
Section 55A	Recommendations for a fine: the inspector must serve a copy of the recommendations on any health and safety representative responsible for the working place in question (if there is no health and safety committee)
Section 56	The employer must promptly supply a copy of any instruction of an inspector to the health and safety representative representing the employees affected by the instruction
Section 60	Initiating investigations: an inspector must investigate any cause for concern on health and safety grounds if requested to do so by a health and safety representative at the mine

Section 64	An inspector must prepare a written report of the findings of an investigation to the health and safety representative that requested the investigation
Section 65(3)	An inspector will conduct an inquiry if requested in writing to do so by (b) a health and safety representative
Section 69	Right to participate in inquiry: any health and safety representative responsible for the working place in respect of which the inquiry is held
Section 72	A person presiding at an inquiry must supply a copy of the report and the record of the inquiry to the health and safety representative that requested the inquiry
Chapter 7	
Section 83	No discrimination against employees who exercise rights: No person may discriminate against any employee for: (e) standing for election as a health and safety representative
Schedule 1	Guidelines for determining the number of full-time health and safety representatives
Section 1	The MHSA places the highest value on agreement. For the determination of the number of full-time health and safety representatives the following guidelines are applicable: Minimum threshold: There should be a full-time health and safety representative in every mine taking into account: • the volume, size and physical location of the mine • the health and safety record of the mine • the number of designated working places • the objects of the MHSA The guidelines as to the size of the mine that should have a full-time health and safety representative is a mine with 500 employees Number of full-time health and safety representatives: The formula for determining the number of full-time health and safety representatives should take into account: • the nature, size and physical location of the mine • the health and safety record of the mine • the number of designated working places • the number of health and safety representatives • the number of shafts and the number of employees at the shaft; and • the objects of the MHSA
Chapter 6 of the Mine Health and Safety Act Regulations	Health and safety representatives and Committees
Reg 6.(1)(3) and (4)	If no collective agreement is concluded on the number of full-time H&S reps within three months of negotiations commencing , any party to a dispute (section 26(8)(a), may refer the dispute to the CCMA; if no agreement has been reached within three months of consultations commencing,

	parties to a dispute (section 26(8)(b) may refer the dispute to the CCMA
Reg 6.2	If a collective agreement has been concluded (on the election of H&S reps , full-time H&S reps or employee representation on the H&S committee, the regulations in chapter 6 of the Mine health and Safety Regulations dealing with such an election, do not apply
Regs 6.3, 6.4, 6.5	These regulations deal with the establishment of an election committee, the duties of an election committee, and the duties of the manager
Reg 6.6	Candidates for election as a H&S rep for a shift and designated working places, must be nominated by an employee who works on the same shift at the designated working place. Full-time H&S reps must be nominated by an employee
Reg 6.7	Procedures for the election of H&S representatives: one candidate: election officer must declare candidate elected. More than one candidate, the election officer must hold an election. At least 50% or more of the employees who work on the same shift at the designated working place must vote in the election. Less than 50%, re-election
Reg 6.8	Procedure for the election of a full-time H&S rep: if the number of candidates nominated is not more than the number that must be elected, the election officer must declare the candidates elected. If more, the election officer must hold an election. The election is valid only if more than 50% of the employees vote in the election. If less, a subsequent election must be arranged.
Reg 6.9	Manager must within 7 days of election, appoint in writing every employee elected as a H&S rep., provide every H&S rep with suitable means of identification as a H&S rep., prominently and conspicuously display the photograph and name of the H&S rep at an appropriate place at the mine.
Reg 6.10	Every employee representative on a H&S committee at a mine must be appointed by a majority of the H&S reps at the mine.
Reg 6.11	Period of office is three years. Every H&S rep and employee rep on a H&S committee may be reappointed after the expiry of their periods of office.
Reg 6.12	A H&S rep must vacate office at the expiry of that rep's period of office, or if: The rep no longer satisfies the qualifications contemplated in section 28(1); or The rep resigns as a H&S rep; or For not performing and at least 50% of the employee rep on the H&S committee or 50% of the employees in the designated working place requires the rep to vacate the office. This request must be in writing.

Case study research

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APPENDIX 3: LETTER TO MINE MANAGER & CRITERIA FOR THE SELECTION OF HSR RESPONDENTS

Nancy Coulson
Programme Manager
Centre for Sustainability in Mining and Industry
Date:

To: Name
Company/mine Name:

Dear Mine Manager

A STUDY OF THE WORK AND PRACTICE OF HEALTH AND SAFETY (H&S) REPRESENTATIVES

1. Background

I am Nancy Coulson, working at The **Centre for Sustainability in Mining and Industry (CSMI)**, located in the School of Mining Engineering at the **University of the Witwatersrand**. In association with CSMI, I am conducting a PhD research study which involves looking into H&S representatives working underground. The study aims to explore the practice of working as a worker elected or appointed health and safety representative as set out under the Mine Health and Safety Act No. 29 of 1996 as amended.

The purpose of the study is to present a full account of the work of both full-time and part–time H&S representatives over the period of a year starting in early 2015. In particular, the study will focus on how representatives are selected and prepared for their role. It will then explore the day-to-day activities and responsibilities of being a worker representative. The results of the study will be made available to your company and to the broader mining sector and will provide information about worker participation in mine health and safety.

2. The selection of mine sites for participation in the study

Your company has been randomly selected to participate in this study. This means there is no specific reason why your company has been selected. The study includes large scale mines. Participation in the study is voluntary, and you are welcome to refuse to participate or to stop your participation at any point. There is no penalty for not participating in the study. There is no payment for participation in this study.

The name of your company and the participating mine site will remain anonymous in any report generated by the study. The records of the interviews will be kept confidential by the researchers. All audio recordings of interviews conducted as part of the research will be destroyed at the end of the research period.

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3. The components of the study

There are six components to this study described in the following bullet points:

- **Identification of an underground mine shaft or section of a mine shaft from which to draw a sample of participants for the study:** Participating companies are asked to identify one underground mine operation from which a sample of both full-time and part-time H&S representatives can be chosen. The criteria and number of H&S representatives to be selected is included in the attached annex to this letter.
- **Interviews with H&S representatives:** To conduct this study CSMI will interview face-to-face a sample of H&S representatives at four intervals (every three months) during the study year from February 2015 until January 2016. Each interview will take about 60-90 minutes. The interviews will be audio-taped in order to transcribe the information accurately. A separate consent form will be provided for this. In addition we will telephone the same H&S representatives once between interviews to ask them about their work. We will also request that a participating H&S representative contact the research team when he or she is involved with an exceptional inspection (not an inspection that happens in the normal course of a shift), an audit, an investigation, an inquiry or the implementation of the right to refuse dangerous work (or Section 23). Towards the end of the research period some participating H&S representatives may be invited to a workshop to review the findings of the research.
- **Document review:** To complete a full account of the work of H&S representatives relevant mine documentation will be reviewed. These documents are wide ranging and will include amongst other documentation the collective agreement describing the selection of H&S representatives, training materials, risk assessments and codes of practice to provide insight into the hazards and priorities for H&S representatives.
- **Key informant interviews with members of the mine H&S system:** The key individuals who constitute the mine H&S system will be interviewed to understand their experience of worker elected H&S representatives. Key informant interviews will include the Safety Manager, the Occupational Hygienist, the Occupational Medical Practitioner, first line supervisors, the employer and employee chairs of the mine H&S committee and representatives of organized labour.
- **Non participant observation at the mine H&S committee:** H&S representatives contribute to the mine H&S committee. The principal investigator requests one opportunity to observe the mine H&S committee. All information discussed at the H&S committee that is outside the scope of this study will be kept confidential.
- **Focus group discussion with production workers:** One focus group with production workers who work in the same underground shaft as the participating H&S representatives will be facilitated to gauge worker experience of H&S representatives.

4. The phases of the study

The study is designed to be conducted over the period of a year. In the first three months of the study you are asked to identify a section of your operation as a research site, to give permission for the interviewing of the selected H&S representatives and to provide copies of documents necessary to the document review. Other research activities will be scheduled for later in the research period. A schedule of visits to your mine will be agreed in advance with you.

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1. **Ethics clearance**

This research has been reviewed and cleared by the Human Research Ethics Committee (Medical) at the University of Witwatersrand. Should you have any concerns about the rights of participants in this study, then you may approach Professor Peter Cleaton-Jones at the contact details below.

Professor Peter Cleaton-Jones .
Chair,Human Research Ethics Committee (Medical)
Steve Biko Centre for Bioethics University of the Witwatersrand.
Phone: Steve Biko Centre for Bioethics Administrator 011-717-2635; direct 011-717-2301
Email:peter.cleaton-jones@wits.ac.za

2. **Principal investigator**

I am the principal investigator for this study. My contact details are:

Nancy Coulson
Programme Manager, Stakeholder Engagement
Centre for Sustainabiity in Mining and Industry, University of Witwatersrand
Tel:011 -717 7055, Cell number: 083 289 7335
Email address: nancy.coulson@wits.ac.za

You are welcome to contact me about any queries or concerns you may have about the study.

Yours sincerely,

Nancy Coulson
Programme Manager
Stakeholder Engagement

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UNIVERSITY OF THE WITWATERSRAND

Selection criteria: HEALTH AND SAFETY (H&S) REPRESENTATIVE

CSMI requests the support of your underground mine operation in the selection of H&S representatives to participate in the study. You are asked to identify both full-time and part-time H&S representatives.

Large-Scale Mines

A large scale mine is requested to identify one shaft or section of an underground mine operation for inclusion in the study. This section of the mine may have between 2-3000 employees working there. The principal researcher will request the list of part-time and full-time H&S representatives for this section of the mine only and information about whether they have held this post for more or less than 18 months. From this a random selection of H&S reps can be made for participation in the study. The table on the next page provides the number of H&S representatives requested to participate in the study.

Type of H&S representative	No. requested for study	Criteria
Full time	**Two in total**	One with 18 months or more experience as an H&S representative One with less than 18 months experience as an H&S representative Member of mine H&S committee
Part time	**Four in total**	Two with 18 months or more experience as an H&S representative Two with less than 18 months experience as an H&S representative H&S representatives to be working in different designated workplaces underground

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APPENDIX 4: INFORMATION SHEET: HEALTH AND SAFETY (H&S) REPRESENTATIVES

A STUDY OF THE WORK AND PRACTICE OF HEALTH AND SAFETY REPRESENTATIVES

I am Nancy Coulson, working at The **Centre for Sustainability in Mining and Industry (CSMI)**, located in the School of Mining Engineering at the **University of the Witwatersrand**. In association with CSMI, I am conducting a PhD research study which involves looking into H&S representatives working underground. You are invited to participate in this research study .You are identified as a possible participant for this study because you are a part-time or full-time health and safety (H&S) representative working in an underground mine.

1. Purpose of the study

CSMI is conducting independent research into H&S representatives working underground. The study aims to explore the practice of working as a worker elected or appointed H&S representative as set out under the Mine Health and Safety Act No. 29 of 1996 as amended.

The purpose of the study is to present a full account of the work of both full-time and part–time H&S representatives over the period of a year starting in early 2015. The study will focus on how representatives are selected and prepared for their role. It will then explore the day-to-day activities and responsibilities of being a worker representative.

2. How the study will be conducted

If you volunteer to participate in this study we will interview you face-to-face four times (once every three months) during the study year starting in February 2015. Each interview will take about 60-90 minutes. During these interviews we will ask you questions about your work as an H&S representative. The interviews will be audio-taped in order to transcribe the information accurately. A separate consent form will be provided for this.

If you volunteer to participate we will also contact you by phone between the interviews to find out how your work as an H&S representative has been since we last met. This telephone call will take 15 minutes only.

We also request that if you agree to participate in this study, you will contact the research team when you are involved with an event such as an exceptional inspection (not an inspection that happens in the normal course of a shift), an audit, an investigation, an inquiry or the implementation of the right to refuse dangerous work (or Section 23).

Towards the end of 2015 some of the H&S representatives who have volunteered to participate in the study will be invited to a workshop to review the findings of the research.

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3. **Potential risks or discomfort**

The questions we ask you may be of a personal and sensitive nature. We may ask you to recall difficult health and safety situations you have been in when underground. If the research causes any emotional or psychological distress then the research team will ensure you are provided with support through the company occupational health services for which the details are….(to be added when research site confirmed)

The research team will interview you before or at the end of a shift, or at another time convenient to yourself. The research will not interfere with your commitments in the workplace.

4. **Potential benefits of participating in the study**

You will not directly benefit from participating in this study. However the information that is collected from this study will be used to strengthen the participation of workers in health and safety.

5. **Payment for participation**

You will not receive any payment for participating in this study.

6. **Confidentiality**

The records of the interviews will be kept confidential by the researchers. All audio recordings of interviews will be destroyed at the end of the research period. You will remain anonymous in any report or publication generated by the study.

7. **Participation and withdrawal**

You can choose whether to be in this study or not. If you volunteer to be in this study you may withdraw at any time without consequences of any kind. You may refuse to answer any questions you don't want to answer and still remain in the study.

8. **Principal investigator**

The principal investigator for the study is Nancy Coulson. If you have any questions or concerns about the research, please feel free to contact her.

Nancy Coulson: Office number is 011 717 7055 Cell number: 083 289 7335 email address is nancy.coulson@wits.ac.za

9. **Rights of research participants**

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UNIVERSITY OF THE WITWATERSRAND

You may withdraw your consent to participate in the study at any time. There are no penalties for doing this. If you have any questions about your rights as a research participant then you may contact **Professor Peter Cleaton-Jones** .
Chair,Human Research Ethics Committee (Medical)
Steve Biko Centre for Bioethics University of the Witwatersrand.
Phone: Steve Biko Centre for Bioethics Administrator 011-717-2635;direct 011-717-2301
Email:peter.cleaton-jones@wits.ac.za

Centre for Sustainability in Mining and Industry, University of the Witwatersrand
Nancy Coulson
2014

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INFORMED CONSENT H&S REPRESENTATIVE

A STUDY OF THE WORK AND PRACTICE OF HEALTH AND SAFETY REPRESENTATIVES

I, _____, consent to participate in a research project conducted by the CSMI of the University of the Witwatersrand. I understand that this research is about the practice of being a health and safety representative in an underground mine as set out under the Mine Health and Safety Act No 29 of 1996 as amended.

1. My participation in this research is voluntary.
2. I understand that I will not be paid for my participation.
3. I understand if I feel uncomfortable in any way during the interview discussion session, I have the right to decline to answer any question or to end the interview discussion or to withdraw my consent to participate.
4. Participation involves being interviewed by a researcher from the CSMI.
5. The interview will last approximately 60-90 minutes and may be extended with my permission. Notes will be written during the interview. The interview will also be audio-taped in order to transcribe the information. A separate consent form will be provided for this.
6. My identity will be kept confidential. My name will not appear in a research report.
7. I understand that this research study has been reviewed and approved by the Human Sciences Research Ethics Committee (Medical) of the University of the Witwatersrand.
8. I understand the purpose of this research project which have been explained and provided to me.
9. I understand I will participate in **four face to face interviews** (at three monthly intervals) over the period of a year starting in February 2015.
10. I understand a researcher will **telephone me between interviews** to ask me about my work as an H&S representative. This interview will last for 10-15 minutes only.
11. I understand a researcher will contact me to set up a time for each face to face interview.
12. I understand **I can contact a researcher** when I am involved in my role as an H&S representative in an infrequent event such as an exceptional inspection, an audit, an investigation, an inquiry or in the implementation of the right to refuse dangerous work.
13. I have been given a copy of this consent form.

Study Participant Name and Signature: _____

Researcher Name and Signature: _____

University of the Witwatersrand, Chamber of Mines Building, Third Floor, West Campus, Enoch Sontonga Road, Braamfontein, 2017
Private Bag 3, Wits, 2050 T: +27 11 717 7422 F: +27 11 717 7051 info.csmi@wits.ac.za www.csmi.co.za

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UNIVERSITY OF THE WITWATERSRAND

CONSENT TO AUDIO RECORDING & TRANSCRIPTION

A STUDY OF THE WORK AND PRACTICE OF HEALTH AND SAFETY REPRESENTATIVES

This study involves the audio recording of your face to face interview with a researcher from CSMI. You will be interviewed four times (once every three months) between February 2015 and January 2016.

Only the research team will be able to listen to the recordings. The tapes will be translated and transcribed by the research team. The recordings will be stored for two years after publication of the study or six years in the absence of publication. Your identity will be kept confidential. Your name will not appear in the research report.

By signing this form, I give my permission for the researcher to audio record four interviews as part of this research. I also understand that this consent for recording is effective until the 31st January 2016.

Participant's Name:_____

Participant's Signature: _____**Date:**_____

Researcher's Name:_____

RESEARCHER'S SIGNATURE: _____**DATE:**_____

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UNIVERSITY OF THE WITWATERSRAND

APPENDIX 5: INFORMATION SHEET
H&S PROFESSIONALS

A STUDY OF THE WORK AND PRACTICE OF HEALTH AND SAFETY REPRESENTATIVES

I am Nancy Coulson, working at The **Centre for Sustainability in Mining and Industry (CSMI)**, located in the School of Mining Engineering at the **University of the Witwatersrand**. In association with CSMI, I am conducting a PhD research study which involves looking into H&S representatives working underground. You are invited to participate in this research study. You are identified as a possible participant for this study because you make an important contribute to the mine occupational health and safety system.

1. **Purpose of the study**

CSMI is conducting independent research into H&S representatives working underground. The study aims to explore the practice of working as a worker elected or appointed H&S representative as set out under the Mine Health and Safety Act No. 29 of 1996 as amended.

The purpose of the study is to present a full account of the work of both full-time and part–time H&S representatives over the period of a year starting in early 2015. The study will focus on how representatives are selected and prepared for their role. It will then explore the day-to-day activities and responsibilities of being a worker representative.

2. **How the study will be conducted**

If you volunteer to participate in this study we will interview you face-to-face once. The interview will take about 60-90 minutes. During this interview we will ask you questions about your work in H&S. The interview will be audio-taped in order to transcribe the information accurately. A separate consent form will be provided for this.

3. **Potential risks or discomfort**

The questions we ask you may be of a personal and sensitive nature. We may ask you to recall difficult health and safety situations you have been in when underground. If the research causes any emotional or psychological distress then the research team will ensure you are provided with support through the company occupational health services for which the details are….(to be added when research site confirmed) The research team will interview you at a time convenient to yourself. The research will not interfere with your commitments in the workplace.

4. **Potential benefits of participating in the study**

You will not directly benefit from participating in this study. However the information that is collected from this study will be used to strengthen the participation of workers in health and safety.

5. **Payment for participation**

You will not receive any payment for participating in this study.

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6. Confidentiality

The records of the interviews will be kept confidential by the researchers. All audio recordings of interviews will be destroyed at the end of the research period. You will remain anonymous in any report or publication generated by the study.

7. Participation and withdrawal

You can choose whether to be in this study or not. If you volunteer to be in this study you may withdraw at any time without consequences of any kind. You may refuse to answer any questions you don't want to answer and still remain in the study.

8. Principal investigator

The principal investigator for the study is Nancy Coulson. If you have any questions or concerns about the research, please feel free to contact her.

Nancy Coulson: Office number is 011 717 7055 Cell number: 083 289 7335 email address is nancy.coulson@wits.ac.za

9. Rights of research participants

You may withdraw your consent to participate in the study at any time. There are no penalties for doing this. If you have any questions about your rights as a research participant then you may contact **Professor Peter Cleaton-Jones** .
Chair,Human Research Ethics Committee (Medical)
Steve Biko Centre for Bioethics University of the Witwatersrand.
Phone: Steve Biko Centre for Bioethics Administrator 011-717-2635;direct 011-717-2301
Email:peter.cleaton-jones@wits.ac.za

Centre for Sustainability in Mining and Industry, University of the Witwatersrand
Nancy Coulson
2014

CENTRE FOR SUSTAINABILITY IN MINING AND INDUSTRY
UNIVERSITY OF THE WITWATERSRAND

APPENDIX 6: INFORMATION SHEET
REPRESENTATIVES OF ORGANISED LABOUR

A STUDY OF THE WORK AND PRACTICE OF HEALTH AND SAFETY REPRESENTATIVES

I am Nancy Coulson, working at The **Centre for Sustainability in Mining and Industry (CSMI)**, located in the School of Mining Engineering at the **University of the Witwatersrand**. In association with CSMI, I am conducting a PhD research study which involves looking into H&S representatives working underground. You are invited to participate in this research study. You are identified as a possible participant for this study because you make an important contribute to the mine occupational health and safety system.

1. Purpose of the study

CSMI is conducting independent research into H&S representatives working underground. The study aims to explore the practice of working as a worker elected or appointed H&S representative as set out under the Mine Health and Safety Act No. 29 of 1996 as amended.

The purpose of the study is to present a full account of the work of both full-time and part–time H&S representatives over the period of a year starting in early 2015. The study will focus on how representatives are selected and prepared for their role. It will then explore the day-to-day activities and responsibilities of being a worker representative.

2. How the study will be conducted

If you volunteer to participate in this study we will interview you face-to-face once. The interview will take about 60-90 minutes. During this interview we will ask you questions about your work in H&S. The interview will be audio-taped in order to transcribe the information accurately. A separate consent form will be provided for this.

3. Potential risks or discomfort

The questions we ask you may be of a personal and sensitive nature. We may ask you to recall difficult health and safety situations you have been in when underground. If the research causes any emotional or psychological distress then the research team will ensure you are provided with support through the company occupational health services for which the details are….(to be added when research site confirmed) The research team will interview you at a time convenient to yourself. The research will not interfere with your commitments in the workplace.

4. Potential benefits of participating in the study

You will not directly benefit from participating in this study. However the information that is collected from this study will be used to strengthen the participation of workers in health and safety.

5. Payment for participation

You will not receive any payment for participating in this study.

6. Confidentiality

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The records of the interviews will be kept confidential by the researchers. All audio recordings of interviews will be destroyed at the end of the research period. You will remain anonymous in any report or publication generated by the study.

7. Participation and withdrawal

You can choose whether to be in this study or not. If you volunteer to be in this study you may withdraw at any time without consequences of any kind. You may refuse to answer any questions you don't want to answer and still remain in the study.

8. Principal investigator

The principal investigator for the study is Nancy Coulson. If you have any questions or concerns about the research, please feel free to contact her.

Nancy Coulson: Office number is 011 717 7055 Cell number: 083 289 7335 email address is nancy.coulson@wits.ac.za

9. Rights of research participants

You may withdraw your consent to participate in the study at any time. There are no penalties for doing this. If you have any questions about your rights as a research participant then you may contact **Professor Peter Cleaton-Jones** .
Chair,Human Research Ethics Committee (Medical)
Steve Biko Centre for Bioethics University of the Witwatersrand.
Phone: Steve Biko Centre for Bioethics Administrator 011-717-2635;direct 011-717-2301
Email:peter.cleaton-jones@wits.ac.za

Centre for Sustainability in Mining and Industry, University of the Witwatersrand
Nancy Coulson
2014

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UNIVERSITY OF THE WITWATERSRAND

APPENDIX 7: RESEARCH TOOLS QUARTER 1

A STUDY OF THE WORK AND PRACTICE OF HEALTH AND SAFETY (H&S) REPRESENTATIVES

Quarter 1: Demographic Data: HEALTH AND SAFETY REPRESENTATIVE

I am a researcher from the Centre for Sustainability in Mining and Industry (CSMI) at the University of the Witwatersrand conducting independent research for the centre.

Your name will not be used in any of the research, so you will remain completely anonymous. Please feel free to speak openly.

You do not have to participate and can withdraw at any time. The completion of this form will take 10 minutes.

Thank you for your participation.

Company/Mine:
……

Town/City: ……

Interviewee:……

Cell phone No:……(Requested for follow- up telephonic queries)

Interviewer: ……

Date: ……

Interview Start: …… Interview ends: ……

Participant code number:_____

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1	What is your age?	[ ][ ] years	
2	What is your sex?	Male	1
		Female	2
3	What is your highest level of schooling completed?	No schooling	1
		Some primary school	2
		Completed primary school	3
		Some high school	4
		Completed matric	5
		Tertiary education	6
4	What is your current position in this company? Or your current position prior to becoming a full-time H&S representative.	_____	
5	How long have you held your current position?	[ ] [ ] years [ ] [ ] months	
5	How long have you worked for your current employer?	[ ] [ ] years [ ] [ ] months	
6	How long have you worked in the mining industry?	[ ] [ ] years [ ] [ ] months	
7	What training have you completed in the mining industry in relation to your current position?	Blasting certificate	1
		Competent person-Making safe	2
		Competent person – Installing/removing support support	3
		Mine Environmental Control Certificate	4
		Intermediate Certificate in Mine Environmental Control	5
		Strata control	6
		Occupational hygiene	7
		Health and safety-risk assessment	8

		Health and safety – inspections and audits	9
		Health and safety investigations	10
		Other (specify) _____	
8	What is your home language / mother tongue?	isiZulu	1
		Setswana	2
		isiXhosa	3
		Xitsonga	4
		TshiVenda	5
		Sesotho	6
		Sesotho sa Leboa	7
		isiNdebele	8
		SiSwati	9
		Afrikaans	10
		English	11
		Other (specify): _____	
9	When were you elected (selected) as a H&S representative	[ ] [ ] month [ ] [ ] [ ] [ ] year	
10	Are you a full-time or part-time H&S representative	Full-time	1
		Part-time	2
11	Do you have a designated workplace as a H&S representative?	Yes	1
		No	2
	Can you describe or name your designated workplace?		
12	How many employees do you represent as a H&S representative?	Less than 50	1
		More than 50 but less than 100	2
		More than 100	3
13	How many terms have you served as a H&S representative	First term	1
		Second term	2
		More than two terms	3
14	Are you a member of a trade union?	NUM	1

		AMCU	2
		Solidarity	3
		UASA	4
		Other (specify): _____	5
		Non-union member	6
15	Are you a member of the mine H&S committee?	Yes	1
		No	2
		Not applicable	3
16	Do you have an office for your work as a H&S representative?	Yes	1
		No	2
17	When does your appointment as a H&S representative come to an end?	[ ] [ ] month [ ] [ ] year	

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A STUDY OF THE WORK AND PRACTICE OF HEALTH AND SAFETY (H&S) REPRESENTATIVES

First Quarter In-Depth Interview: HEALTH AND SAFETY REPRESENTATIVE (WORKPLACE & FULL-TIME)

I am a researcher from the Centre for Sustainability in Mining and Industry (CSMI) at the University of the Witwatersrand conducting independent research.

Your name will not be used in any of the research, so you remain completely anonymous. Please feel free to speak openly.

You do not have to participate and can withdraw at any time.

This interview will take between 60-90 minutes. The interviews will be audio-taped in order to transcribe the information accurately. A separate consent form will be provided for this.

Thank you for your participation.

Company/Mine:

……

Town/City: ……

Interviewee:……

Telephone No:……..(Requested only for follow- up telephonic queries)

Interviewer: ……

Date: ……

Interview Start: …… Interview ends: ……

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Participant code number: _____

1. How did you first get involved in mining?
   (Probe for: Where do you come from? Where and what job did you first hold?)

2. How did you get to where you are now?
   (Probe for: different positions held, different companies worked at)

3. What are the H&S achievements and challenges at this mine?
   (Probe for: knowledge of H&S performance, knowledge of targets and major hazards. Also the balance between the priority for safety and that for health)

4. How did you first get involved with health and safety at this mine?
   (Probe for: any special interest or passion in aspects of H&S, specific incidents you were involved with prior to being appointed as a H&S representative)

5. Describe how you were appointed as a H&S representative
   (Probe for: how election/selection process was handled/ who was involved/what was the role of the union(s)/what was the involvement of management/how did voting take place/ why do you think you were selected/did the union you belong to propose you and/or did you canvas for the role?)

6. Why did you agree to be a H&S representative? What are the benefits to you? What are the risks? How is your pay affected by being a H&S representative, especially bonus payments?

7. How do you understand your role and responsibilities as an H&S representative? (Probe for: where you found out about the role, your feelings about the role)

8. What training and preparation did you receive for your role as a H&S representative?
   (Probe for: training programmes –length of time, who conducted it, where was it held, who else attended the training, the availability of course materials, feelings about value of the training ; and on-the- job mentoring, who does this, how often does it happen; generally feelings of how prepared you feel)

9. What are your day-to-day responsibilities as an H&S representative?
   (Probe for: a role at the start, in the middle at the end of a shift)

10. What other activities have you been involved with as a H&S representative over the last year?
    (Listen for: Infrequent occurrences such as a wider inspection, investigations, audits, inquiries, implementation of the right to refuse dangerous work (Section 23), investigation of employee complaints, making a representation to the employer, participation at the mine H&S committee, review of codes of practice and risk assessments)

11. How do you or the employees you represent, make sure that the workplace is safe, that machines, equipment and tools are in good order, and that work can be done

safely? (Probe for whether there is specific training for this, whether tasks / work activities are planned, whether checklists or forms are used. And ask for copy of any documents in use).

12. What makes your job of being an H&S representative easy?

13. What makes your job of being an H&S representative difficult?

14. Who do you report to? And when does this happen?
    (Probe for: reporting to unions, engaging with workers in the designated workplace, engaging with first line supervisors and other members of mine H&S management system or production management)

15. Describe an event that you were involved with as an H&S representative that made you feel good about your role. Why did you feel good?

16. Describe an event that you were involved with as an H&S representative that made you feel inadequate in your role. What made you feel inadequate?

17. If you are a part-time H&S representative how does the role of being an H&S representative combine with your job? Can you manage your workload?
    (Probe for: is there a synergy between the two, what is the balance of activities, when do you experience conflict of interest)

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Is there anything you would personally like to add?

……
……

On behalf of the CSMI, thank you for your time. It is really appreciated.

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A STUDY OF THE WORK AND PRACTICE OF HEALTH AND SAFETY (H&S) REPRESENTATIVES

Document Review: OPERATION MINE SITE

I am a researcher from the Centre for Sustainability in Mining and Industry (CSMI) at the University of the Witwatersrand conducting independent research for the centre.

The following documents are requested to support the collection of data about the role of health and safety representatives. I would be grateful if you could co-operate with the compilation of all of these. The information will only be shared in the research team. The name of your mine company and the name of the operating mine participating in this study will not be made available in the research report. I request that anonymized accident and investigation reports are provided so that the personal identities of all the individuals involved are unknown to the research team.

Company/Mine:
……

Town/City: ……..

Respondent/key contact for document collection:……

Phone No:……..(Requested for follow- up telephonic queries)

Researcher: ……

Date: ……

Requested documents for review at each participating mine site as per the table below.

Requested Document	Comment	Date document received by research team

Statutory Annual Health and Safety Report (MHSA Section 2(1)(c)	2 reports at the start and end of study period	First report:
		Second report:
Statutory Annual Medical Report Section 16	2 reports at the start and end of study period	First report:
		Second report:
Operation/Company Health and Safety Policy		
Collective Agreement	Signed between mine management and organised labour. (Should include designation of workplace, # of full-time H&S reps, terms of office and removal from office, election or appointment process, manner in which H&S reps must perform their functions)	
Risk Assessment Tools	What is the system or methods are used to assess risks (name/s)? Guideline and tools for risk assessors (should have a range of different tools and forms)? Who (management, supervisors, workers, consultants) does what?	
Risk Assessments and Codes of Practice for major hazards	Employee participation in risk assessment is mandatory MHSA Section 11(c) and (d)	
Procedure Right to Refuse Dangerous Work	H&S reps have a statutory right to withdraw workers from a dangerous	

	workplace MHSA Section 23	
Minutes of the H&S Committee Meetings	One meeting prior to the start of the study period and all meetings during the study period.	
Training outcomes, curriculum and manual/materials for H&S representatives	Can also be validated in the record of all training given to each employee Section 10	
Job descriptions and responsibilities for H&S representatives both Full-time and Part-time	May be part of the collective agreement	
Anonymized accident and investigation reports (reportable accidents and occurrences only Regulation 23)	For the year of study only	
Instruction issued by an Inspector Section 55A And/or Employer responsibilities Section 56	Must be served to a H&S representative in affected designated workplace	
A sample of inspection and audit reports	For the year of study only	
Company sustainability reports	2 reports at the start and end of the study period	First report: Second report:

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A STUDY OF THE WORK AND PRACTICE OF HEALTH AND SAFETY (H&S) REPRESENTATIVES

Quarter 1: Telephone interview: HEALTH AND SAFETY REPRESENTATIVE

I am a researcher from the Centre for Sustainability in Mining and Industry (CSMI) at the University of the Witwatersrand conducting independent research for the centre.

Your name will not be used in any of the research, so you will remain completely anonymous. Please feel free to speak openly.

You do not have to participate and can withdraw at any time. The completion of this telephone interview will take 10 minutes.

Thank you for your participation.

Company/Mine:
……

Town/City: ……

Interviewee:……

Cell phone No:……..(Requested for follow- up telephonic queries)

Interviewer: ……

Date: ……

Interview Start: …… Interview ends: ……

_____

Participant code number:_____

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1	Have there been any changes at your workplace since we last spoke	Yes	1
		No	2
	If Yes please describe these changes		
2	Have there been any changes in your role as a H&S representative since we last spoke?	Yes	1
		No	2
	If Yes please describe these changes		
3	Have you received any further training as a H&S representative since we last spoke?	Yes	1
		No	2
	If Yes please describe this training		
4	Have you been involved in any of the following since we last spoke	Workers refusing to work in a dangerous workplace	1
		You have withdrawn workers from a dangerous workplace	2
		A risk assessment of your workplace? The section in which you are appointed?	3

		A risk assessment in another area of the mine?	4
		An exceptional inspection	5
		An audit	6
		An investigation	7
		An inquiry	8
		Other please specify	
5	What challenges have you faced since we last spoke?		
6	What has gone well since we last spoke?		
7	Is there anything else you would like to share with us?		

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A STUDY OF THE WORK AND PRACTICE OF HEALTH AND SAFETY (H&S) REPRESENTATIVES

Quarter 1: Telephone interview: HEALTH AND SAFETY REPRESENTATIVE IN THE EVENT OF AN EXTRAORDINARY EVENT

I am a researcher from the Centre for Sustainability in Mining and Industry (CSMI) at the University of the Witwatersrand conducting independent research for the centre.

Your name will not be used in any of the research, so you will remain completely anonymous. Please feel free to speak openly.

You do not have to participate and can withdraw at any time. The completion of this form will take 10 minutes.

Thank you for your participation

Company/Mine: ……

Town/City: ……..

Interviewee:……

Cell phone No:……..(Requested for follow- up telephonic queries)

Interviewer: ……

Date: ……

Interview Start: ……. Interview ends: ……..

_____

Participant code number:_____

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1	Please describe the event that prompted this call to the research team.
2	Describe your role in this event
3	What specific actions did you take? Probe for communication to whom on what, instructions given.
4	What happened as a consequence of your actions?
5	How did you feel during this event about your role as an H&S representative? Why did you feel this? Probe for what went well and what was difficult.

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6	What happened at the end of this event?
7	Were you satisfied with the outcome of this event? Why or why not?
7	Is there anything else you would like to share with us?

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APPENDIX 8: RESEARCH TOOLS QUARTER 2

A STUDY OF THE WORK AND PRACTICE OF HEALTH AND SAFETY (H&S) REPRESENTATIVES

Second Quarter In-Depth Interview: HEALTH AND SAFETY REPRESENTATIVE

(FULL-TIME)

I am a researcher from the Centre for Sustainability in Mining and Industry (CSMI) at the University of the Witwatersrand conducting independent research.

Your name will not be used in any of the research, so you remain completely anonymous. Please feel free to speak openly.

You do not have to participate and can withdraw at any time.

This interview will take between 60-90 minutes. The interviews will be audio-taped in order to transcribe the information accurately. A separate consent form will be provided for this.

Thank you for your participation.

Company/Mine:
……

Town/City: ……

Interviewee:……

Telephone No:……(Requested only for follow- up telephonic queries)

Interviewer: ……

Date: ……

Interview Start: …… Interview ends: ……

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Participant code number: _____

18. Since we last met is there anything that you would like to tell me about?

19. Tell me about the people you work with most closely
    a. Who are these people? What jobs do they do?
    b. When do you get to work with these people?

20. Describe exactly what happened yesterday when you went to work
    a. What time did you arrive for work?
    b. How did you feel yesterday, when you arrived at work? Was there anything bothering you yesterday? (It can be a personal or work related problem)
    c. Who did you meet up with first? How did you plan your day?

21. Describe each activity of your work day yesterday
    a. What did you do in the morning
    b. What did you do at lunchtime
    c. What did you do in the afternoon
    d. What time did your work day end yesterday?

22. How would you describe your relationship with the PT H&S reps? (Probe for mentoring or coaching, any form of accountability or oversight)
    a. How many PT H&S reps do you work with?
    b. How often do you meet with them?

23. In your opinion what are the challenges that PT H&S representatives face?
    a. What grievances have PT H&S reps raised with you?
    b. What was your role in addressing these challenges?
    c. Has this company ever engaged in any process to address the grievances of PT H&S reps

24. How would you describe your relationship with inspectors from the Mine health and Safety Inspectorate? (Probe for are you on first name terms, have you ever called the Inspectorate? When did you last meet with an inspector?)
    a. Can you describe an incident when an inspector asked you for your opinion?

25. How would you describe your relationship with production management on this mine? (Probe for are you on first name terms, when did you last meet with production management?)
    a. Can you describe an incident when a production manager asked you for your opinion?

26. How would you describe your relationship with occupational medical practitioners on this mine? (Probe for are you on first names terms, When did you last meet with medical practitioners?)
    a. Can you describe an incident when the occupational medical practitioner asked you for your opinion?

27. How would you describe your relationship with occupational hygienist on this mine? (Probe for are you on first names terms, When did you last meet with medical practitioners?)
    b. Can you describe an incident when the occupational hygienist asked you for your opinion?

28. How would you describe your relationship with safety management on this mine? (Probe for are you on first name terms, how often and when do you meet with safety officers and management?)

29. Describe the last H&S committee meeting you attended
    a. When was this meeting
    b. Who was at the meeting
    c. What information was presented at this meeting (accident stats, other?)
    d. Who led the meeting
    e. What was your role in the meeting (probe for level of participation, or leadership)
    f. What came out of the meeting?

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30. In what ways, if any, do you experience obstacles to your voice being heard on this mine?
    a. Can you give an example of when you have felt overlooked?
    b. Can you give an example of when you felt you were not taken seriously?
    c. Can you describe anyways you have found to get around this?

31. Can you tell me about anything further you would like to be consulted about on this mine?

Is there anything you would personally like to add?

……
……
……

On behalf of the CSMI, thank you for your time. It is really appreciated.

CENTRE FOR SUSTAINABILITY IN MINING AND INDUSTRY
UNIVERSITY OF THE WITWATERSRAND

A STUDY OF THE WORK AND PRACTICE OF HEALTH AND SAFETY (H&S) REPRESENTATIVES

Second Quarter In-Depth Interview: HEALTH AND SAFETY REPRESENTATIVE (WORKPLACE)

I am a researcher from the Centre for Sustainability in Mining and Industry (CSMI) at the University of the Witwatersrand conducting independent research.

Your name will not be used in any of the research, so you remain completely anonymous. Please feel free to speak openly.

You do not have to participate and can withdraw at any time.

This interview will take between 60-90 minutes. The interviews will be audio-taped in order to transcribe the information accurately. A separate consent form will be provided for this.

Thank you for your participation.

Company/Mine:
……

Town/City: ……

Interviewee:……

Telephone No:……(Requested only for follow- up telephonic queries)

Interviewer: ……

Date: ……

Interview Start: …… Interview ends: ……

Participant code number: _____

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1. Since we last met is there anything that your would like to tell me about?

2. Tell me about the team of people you work with?
    a. Who is in the team? How many people are in the team?
    b. What jobs do different people have in the team?
    c. What is your job in the team?
    d. Who do you work most closely with?

3. How often does your team change the location (place) where you are working?
    a. When was the last change, why did this happen?

4. How often are there changes to the members of your team?
    a. When was the last change to your team? Why did this happen?
    b. What was the impact of this change on your team?
    c. How did this affect your role as a H&S representative?

5. Describe exactly what happened yesterday when you went to work
    a. What time did you arrive for work?
    b. How did you feel yesterday, when you arrived at work? Was there anything bothering you yesterday? (It can be a personal or work related problem)
    c. When did you meet up with your team?

   d. How were the members of your team yesterday? Was anything bothering the members of your team yesterday? (It can be personal or work related problem)

6. Describe what happened when you got underground yesterday
   a. How did your team find out what they had to do for the shift?
   b. How did you and your team feel about this? (Did you feel pressure, was there something that worried you?)
   c. How did your team discuss getting this work done? What did you discuss? What was your role in this discussion?
   d. If not yesterday, when was the last time your team experienced production pressure? What happened?

7. Was anyone on your team tired or unwell yesterday?
   a. How did you know this person was tired or unwell?
   b. How did you and your team feel about this?
   c. How did your team respond to this? What did you do?
   d. If not yesterday, when was the last time your team experienced someone who was unwell or tired? What happened?

8. Did your **team experience** any challenges during the shift yesterday?
   a. Describe these (lack of material, equipment failure, changing H&S conditions)
   b. What was your role in addressing these challenges?

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9. Describe what you did yesterday as **the H&S representative**
    a. At the start of the shift
    b. In the middle of the shift
    c. At the end of the shift
    d. Describe any discussions you had yesterday with your team about H&S (if any) (These can be group talks or just one on one coaching and/or correction)
    e. Describe any difficulties you faced yesterday

10. How do you know when your workplace is unsafe?
    a. Describe the signs that you look for (probe for tacit knowledge/craft skills)

11. Describe the last meeting you attended as a H&S rep
    a. When was this meeting
    b. Who was at the meeting
    c. What information was presented at this meeting (accident stats, other?)
    d. Who led the meeting
    e. What was your role in the meeting (probe for level of participation, or leadership)
    f. What came out of the meeting?

Is there anything you would personally like to add?

……
……
……

On behalf of the CSMI, thank you for your time. It is really appreciated.

CENTRE FOR SUSTAINABILITY IN MINING AND INDUSTRY
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A STUDY OF THE WORK AND PRACTICE OF HEALTH AND SAFETY (H&S) REPRESENTATIVES

Second Quarter In-Depth Interview: OH MEDICAL PRACTITIONER/SAFETY MANAGER/PRODUCTION MANAGER/OCCUPATIONAL HYGIENIST (MEMBERS OF H&S COMMITTEE)

I am a researcher from the Centre for Sustainability in Mining and Industry (CSMI) at the University of the Witwatersrand conducting independent research.

Your name will not be used in any of the research, so you remain completely anonymous. Please feel free to speak openly.

You do not have to participate and can withdraw at any time.

This interview will take between 60-90 minutes. The interviews will be audio-taped in order to transcribe the information accurately. A separate consent form will be provided for this.

Thank you for your participation.

Company/Mine:

……

Town/City: ……

Interviewee:……

Telephone No:……(Requested only for follow- up telephonic queries)

Interviewer: ……

Date: ……

Interview Start: …… Interview ends: ……

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Participant code number: _____

12. In your opinion what are the top three H&S priorities on this mine in 2015?

13. What is your responsibility for H&S on this mine?

14. Tell me about the people you work most closely with
    a. Who are these people? What jobs do they do?
    b. When do you get to work with these people

15. Tell me about your relationship with H&S representatives? (Both FT and PT)
    a. Who do you meet with FT and/or PT reps? When do you meet with them?
    b. What do you meet with them about? How often does this happen?

16. How do you understand the role of H&S reps within the H&S management system on this mine?
    a. What are the differences in the role of the FT reps and the PT reps?
    b. Who do FT H&S reps report to on this mine?
    c. Who do PT reps report to on this mine?

17. What value do you think H&S reps add to the H&S management system on this mine?

a. Provide an example of where a FT H&S rep provided value to the H&S management system?
b. Provide an example of where a PT H&S rep provided value to the H&S management system?
c. Describe the involvement of H&S reps in risk management specifically

18. In your opinion what are the challenges that FT H&S representatives face?
    a. Provide an example of these challenges

19. In your opinion what are the challenges that PT H&S representatives face?
    a. Provide an example of these challenges

20. What grievances if any have FT &/or PT H&S reps raised with you?
    a. What was your role (if any) in addressing these challenges?
    b. Has this company ever engaged in any process to address the grievances of FT and/or PT H&S reps

21. Describe the last H&S committee meeting you attended
    g. When was this meeting
    h. Who was at the meeting
    i. What items were on the agenda for this meeting
    j. What information was presented at this meeting (accident stats, other?)
    k. Who led the meeting
    l. What was your role in the meeting?
    m. What came out of the meeting?

22. What is working well at your H&S committee meeting?

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23. What challenges does your H&S committee meeting face?

24. At this H&S committee meeting describe the role of the H&S representatives
    a. Which reps were there? (FT or PT)
    b. In what ways did reps contribute to the content of the meeting?

14. How do you understand the relationship between H&S representatives and organised labour?

15. What changes would you like to see made to the role and function of H&S representatives on this mine?

16. What would need to happen to achieve this?

Is there anything you would personally like to add?

……
……
……

On behalf of the CSMI, thank you for your time. It is really appreciated.

CENTRE FOR SUSTAINABILITY IN MINING AND INDUSTRY
UNIVERSITY OF THE WITWATERSRAND

A STUDY OF THE WORK AND PRACTICE OF HEALTH AND SAFETY (H&S) REPRESENTATIVES

Second Quarter In-Depth Interview: TRAINER H&S REPS

I am a researcher from the Centre for Sustainability in Mining and Industry (CSMI) at the University of the Witwatersrand conducting independent research.

Your name will not be used in any of the research, so you remain completely anonymous. Please feel free to speak openly.

You do not have to participate and can withdraw at any time.

This interview will take between 60-90 minutes. The interviews will be audio-taped in order to transcribe the information accurately. A separate consent form will be provided for this.

Thank you for your participation.

Company/Mine:
……

Town/City: ……

Interviewee:……

Telephone No:……..(Requested only for follow- up telephonic queries)

Interviewer: ……

Date: ……

Interview Start: …… Interview ends: ……

Participant code number: _____

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32. In your opinion what are the top three H&S priorities on this mine in 2015?

33. What is your responsibility towards H&S on this mine?

34. Tell me about the training work you do on this mine
    a. Who do you train?
    b. What training do you provide?
    c. How do you assess the impact of the training provided?

35. How do you understand the role of H&S reps within the H&S management system on this mine?
    a. What are the differences in the role of the FT reps and the PT reps?
    b. Who do FT H&S reps report to on this mine?
    c. Who do PT reps report to on this mine?

36. What value do you think H&S reps add to the H&S management system on this mine?
    a. Provide an example of where a FT H&S rep provided value to the H&S management system?
    b. Provide an example of where a PT H&S rep provided value to the H&S management system?

37. In your opinion what are the challenges that FT H&S representatives face?
    a. Provide an example of these challenges

38. In your opinion what are the challenges that PT H&S representatives face?

a. Provide an example of these challenges

39. Describe the training for H&S representatives on this mine?
    a. What training is provided to FT H&S representatives
    b. What training is provided to PT H&S representatives
    c. How often is this training provided?
    d. What numbers of reps are you training per year?
    e. Describe the risk management training you provide to H&S representatives

40. How is the curriculum for FT and PT H&S reps determined?
    a. Is there customization of this training to the H&S environment at your mine? Who is involved in this?
    b. How is the training accredited or not?
    c. What teaching approaches are utilized? (electronic, face to face, discussion, lecture etc)
    d. What is the language for learning?
    e. What is the assessment process?
    f. What is the follow up process?

41. What is going well in the training of H&S reps?

42. What challenges have you faced in providing training to H&S reps?
    a. Who do you report your challenges to?
    b. What actions have been taken to address your challenges?

43. What changes would you like to see made to the training of FT H&S reps and PT H&S reps?

44. What would need to happen to achieve this?

45. What grievances if any have FT &/or PT H&S reps raised with you?
    a. What was your role (if any) in addressing these challenges?
    b. Has this company ever engaged in any process to address the grievances of FT and/or PT H&S reps

46. What role does the mine H&S committee play in relation to your work? Describe in what capacity you have attended or made a presentation to the mine H&S committee?
    n. When was this meeting
    o. Who was at the meeting
    p. What information was presented at this meeting
    q. What was your role in the meeting?
    r. What came out of the meeting

16. How do you understand the relationship between H&S representatives and organised labour?

17. What changes would you like to see made to the role and function of H&S representatives on this mine?

18. What would need to happen to achieve this?

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UNIVERSITY OF THE WITWATERSRAND

Is there anything you would personally like to add?

……
……
……

On behalf of the CSMI, thank you for your time. It is really appreciated.

CENTRE FOR SUSTAINABILITY IN MINING AND INDUSTRY
UNIVERSITY OF THE WITWATERSRAND

A STUDY OF THE WORK AND PRACTICE OF HEALTH AND SAFETY (H&S) REPRESENTATIVES

Quarter 2: Telephone interview: HEALTH AND SAFETY REPRESENTATIVE

I am a researcher from the Centre for Sustainability in Mining and Industry (CSMI) at the University of the Witwatersrand conducting independent research for the centre.

Your name will not be used in any of the research, so you will remain completely anonymous. Please feel free to speak openly.

You do not have to participate and can withdraw at any time. The completion of this telephone interview will take 10 minutes.

Thank you for your participation.

Company/Mine:
……

Town/City: ……

Interviewee:……

Cell phone No:……..(Requested for follow- up telephonic queries)

Interviewer: ……

Date: ……

Interview Start: …… Interview ends: ……

_____

Participant code number:_____

CENTRE FOR SUSTAINABILITY IN MINING AND INDUSTRY
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1	Have there been any changes at your workplace since we last spoke	Yes	1
		No	2
	If Yes please describe these changes		
2	Have there been any changes in your role as a H&S representative since we last spoke?	Yes	1
		No	2
	If Yes please describe these changes		
3	Have you received any further training as a H&S representative since we last spoke?	Yes	1
		No	2
	If Yes please describe this training		
4	Have you been involved in any of the following since we last spoke	Workers refusing to work in a dangerous workplace	1
		You have withdrawn workers from a dangerous workplace	2
		A risk assessment of your workplace? The section in which you are appointed?	3

		A risk assessment in another area of the mine?	4
		An exceptional inspection	5
		An audit	6
		An investigation	7
		An inquiry	8
		Other please specify	
5	What challenges have you faced since we last spoke?		
6	What has gone well since we last spoke?		
7	Is there anything else you would like to share with us?		

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A STUDY OF THE WORK AND PRACTICE OF HEALTH AND SAFETY (H&S) REPRESENTATIVES

Quarter 2: Telephone interview: HEALTH AND SAFETY REPRESENTATIVE IN THE EVENT OF AN EXTRAORDINARY EVENT

I am a researcher from the Centre for Sustainability in Mining and Industry (CSMI) at the University of the Witwatersrand conducting independent research for the centre.

Your name will not be used in any of the research, so you will remain completely anonymous. Please feel free to speak openly.

You do not have to participate and can withdraw at any time. The completion of this form will take 10 minutes.

Thank you for your participation

Company/Mine: ……

Town/City: ……..

Interviewee:……

Cell phone No:……..(Requested for follow- up telephonic queries)

Interviewer: ……

Date: ……

Interview Start: ……. Interview ends: ……..

_____

Participant code number:_____

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1	Please describe the event that prompted this call to the research team.
2	Describe your role in this event
3	What specific actions did you take? Probe for communication to whom on what, instructions given.
4	What happened as a consequence of your actions?
5	How did you feel during this event about your role as an H&S representative? Why did you feel this? Probe for what went well and what was difficult.

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6	What happened at the end of this event?
7	Were you satisfied with the outcome of this event? Why or why not?
7	Is there anything else you would like to share with us?

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APPENDIX 9: RESEARCH TOOLS QUARTER THREE

A STUDY OF THE WORK AND PRACTICE OF HEALTH AND SAFETY (H&S) REPRESENTATIVES

Third Quarter In-Depth Interview: HEALTH AND SAFETY REPRESENTATIVE

(FULL-TIME)

I am a researcher from the Centre for Sustainability in Mining and Industry (CSMI) at the University of the Witwatersrand conducting independent research.

Your name will not be used in any of the research, so you remain completely anonymous. Please feel free to speak openly.

You do not have to participate and can withdraw at any time.

This interview will take between 60-90 minutes. The interviews will be audio-taped in order to transcribe the information accurately. A separate consent form will be provided for this.

Thank you for your participation.

Company/Mine:
……

Town/City: ……

Interviewee:……

Telephone No:……(Requested only for follow- up telephonic queries)

Interviewer: ……

Date: ……

Interview Start: …… Interview ends: ……

CENTRE FOR SUSTAINABILITY IN MINING AND INDUSTRY
UNIVERSITY OF THE WITWATERSRAND

Participant code number: _____

1. Since we last met is there anything that you would like to tell me about?

2. Tell me about the last time you were sick at work – what happened?
    a. What symptoms did you have?
    b. How did your sickness affect your work?
    c. Did you take time off? how many days were you off– where did you go for treatment? What type of note or evidence did you need for this?
    d. Who did you report to about your ill health?

3. Tell me about workers when they get sick
    a. What are the main symptoms that workers complain of when they start to feel sick?
    b. What happens when someone gets sick at work
    c. How does their sickness affect their work?
    d. Can you give a recent example of what happened when a worker you know got sick? When was this?

4. In your opinion what are the major health problems experienced by mine workers?
    a. What are the causes of these health problems?
    b. What do you think should be done to address these problems?

5. How does HIV and AIDS affect this mine?
    a. How do you get to find out about HIV and AIDS at this mine?
    b. Do you know the prevalence of HIV at your mine? (or figures for)

6. How does TB affect this mine?
    a. How do you get to find out about TB?
    b. Do you know the incidence of TB on this mine? (or figures for)

7. Can you describe any direct experience you have had dealing with someone who has HIV and/or TB?
    a. How did you know they had HIV and TB
    b. What happened?
    c. What did you do?

8. What is the role of H&S reps in relation to HIV and TB?
    a. What is the role of the workplace H&S reps?
    b. What is the role of the FT H&S rep?

9. How is sickness and ill health managed underground?
    a. How do teams manage the situation when someone gets sick?
    b. What is the role of the H&S rep (workplace) when someone gets sick?
    c. What is your role as the full time H&S rep in managing sickness and ill health

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10. In your experience what are the main types of emotional problems faced by mineworkers?
    a. How do teams manage the situation when someone has an emotional problem?
    b. What is the role of the H&S rep (workplace) when someone has an emotional problem?
    c. What is your role as the full time H&S rep in managing emotional difficulties of workers?
    d. Can you give a personal example of what happened when a mineworker had an emotional problem and what you did?

11. In your experience how is occupational disease managed on this mine?
    a. How is silicosis managed?
    b. How is noise induced hearing loss managed?
    c. What other occupational disease are you concerned about as a H&S representative?

12. What is the role of H&S reps in relation to silicosis?
    a. What is the role of the workplace H&S rep?
    b. What is the role of the FT H&S rep?

13. What is the role of H&S reps in relation to noise induced hearing loss?
    a. What is the role of the workplace H&S rep?
    b. What is the role of the FT H&S rep?

14. What is your experience of fatigue in the workplace?
    a. How do teams manage the situation when someone has fatigue?
    b. What is the role of the H&S rep (workplace) when someone is fatigued?
    c. What is your role as the full time H&S rep in managing the fatigue of workers?
    d. Can you give a personal example of what happened when a mineworker had fatigue and what you did?

15. What is your experience of alcohol and substance use (probe for which substance dagga etc) in the workplace?
    a. How do teams manage the situation when someone is under the influence of alcohol or substances?
    b. What is the role of the H&S rep (workplace) when someone is under the influence of alcohol or substances?
    c. What is your role as the full time H&S rep in managing the use of alcohol and/or substances?
    d. Can you give a personal example of what happened when a mineworker was under the influence of alcohol/substances and what you did?

16. Describe how you find out about health issues at your workplace
    a. What training have you received? What issues did the training cover? Who provided this training?
    b. Who can you approach at the mine if you are worried about a health issue and how it is affecting workers?
    c. What else would you like to know about in relation to health at this mine? Are there gaps in the knowledge you have?

17. Describe how the union (organised labour) has supported you to address health issues at the mine?

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18. Describe how the mine health and safety inspectorate has supported you to address health issues at the mine?

19. What changes if any would you like to see in relation to your role as a FT H&S representative in relation to mineworker health?

Is there anything you would personally like to add?

……
……
……

On behalf of the CSMI, thank you for your time. It is really appreciated.

CENTRE FOR SUSTAINABILITY IN MINING AND INDUSTRY
UNIVERSITY OF THE WITWATERSRAND

A STUDY OF THE WORK AND PRACTICE OF HEALTH AND SAFETY (H&S) REPRESENTATIVES

Third Quarter In-Depth Interview: HEALTH AND SAFETY REPRESENTATIVE

(WORKPLACE)

I am a researcher from the Centre for Sustainability in Mining and Industry (CSMI) at the University of the Witwatersrand conducting independent research.

Your name will not be used in any of the research, so you remain completely anonymous. Please feel free to speak openly.

You do not have to participate and can withdraw at any time.

This interview will take between 60-90 minutes. The interviews will be audio-taped in order to transcribe the information accurately. A separate consent form will be provided for this.

Thank you for your participation.

Company/Mine:
……

Town/City: ……

Interviewee:……

Telephone No:……(Requested only for follow- up telephonic queries)

Interviewer: ……

Date: ……

Interview Start: …… Interview ends: ……

Participant code number: _____

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1. Since we last met is there anything that you would like to tell me about?

2. Tell me about the last time you were sick at work – what happened?
    a. What symptoms did you have?
    b. How did your sickness affect your work?
    c. Did you take time off? how many days were you off– where did you go for treatment? What type of note or evidence did you need for this?
    d. Who did you report to about your ill health?

3. Tell me about workers when they get sick
    a. What are the main symptoms that workers complain of when they start to feel sick?
    b. What happens when someone gets sick at work?
    c. How does their sickness affect their work?
    d. Can you give a recent example of what happened when a worker in your team got sick? When was this?

4. In your opinion what are the major health problems experienced by mine workers?
    a. What are the causes of these health problems?
    b. What do you think should be done to address these problems?

5. How does HIV and AIDS affect this mine?
    a. How do you get to find out about HIV and AIDS at this mine?
    b. Do you know the prevalence of HIV at your mine? (or figures for)

6. How does TB affect this mine?
    a. How do you get to find out about TB?
    b. Do you know the incidence of TB on this mine? (or figures for)

7. Can you describe any direct experience you have had dealing with someone who has HIV and/or TB?
    a. How did you know they had HIV and TB
    b. What happened?
    c. What did you do?

8. What is the role of a workplace H&S reps in relation to HIV and TB?
    a. How do you understand the role of the FT H&S rep in relation to HIV and TB?

9. How is sickness and ill health managed underground?
    a. How does your team manage the situation when someone gets sick?
    b. What is your role as the workplace H&S rep when someone gets sick in your workplace?
    c. Can you give a personal example of what happened when someone in your team gets sick underground and what you did?

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10. In your experience what are the main types of emotional problems faced by mineworkers?
    a. How does your team manage the situation when someone has an emotional problem?
    b. What is your role as the workplace H&S rep when someone has an emotional problem?
    c. Can you give a personal example of what happened when a mineworker in your workplace had an emotional problem and what you did?

11. In your experience how is occupational disease managed on this mine?
    a. How is silicosis managed?
    b. How is noise induced hearing loss managed?
    c. What other occupational disease apart from the two that are mentioned are you concerned about as a workplace H&S representative?

12. What is your role as a workplace H&S rep in relation to silicosis?
    a. What action have you taken recently in relation to silicosis?

13. What is your role as a workplace H&S rep in relation to noise induced hearing loss?
    a. What action have you taken recently in relation to noise induced hearing loss?

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14. What is your experience of fatigue in the workplace?
    a. How does your team manage the situation when someone is struggling with fatigue? Probe for personal example
    b. What is your role as the workplace H&S rep when someone has fatigue?

15. What is your experience of alcohol and substance use (probe for which substance dagga etc) in the workplace?
    a. How do teams manage the situation when someone is under the influence of alcohol or substances?
    b. What is your role as the workplace H&S rep when someone is under the influence of alcohol or substances?
    c. Can you give a personal example of what happened when a mineworker was under the influence of alcohol/substances and what you did?

16. Describe how you find out about health issues at your workplace
    a. What training have you received? What issues did the training cover? Who provided this training?
    b. Who can you approach at the mine if you are worried about a health issue and how it is affecting workers?
    c. Do you feel you know enough about health? Y/N What else would you like to know?

17. Describe how the union (organised labour) has supported you to address health issues at the mine?

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18. Describe how the mine health and safety inspectorate has supported you to address health issues at the mine?

19. What improvements if any would you like to see in relation to your role as a workplace H&S representative in relation to mineworker health?

Is there anything you would personally like to add?

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……
……

On behalf of the CSMI, thank you for your time. It is really appreciated.

CENTRE FOR SUSTAINABILITY IN MINING AND INDUSTRY
UNIVERSITY OF THE WITWATERSRAND

A STUDY OF THE WORK AND PRACTICE OF HEALTH AND SAFETY (H&S) REPRESENTATIVES

Third Quarter Focus Group: PRODUCTION WORKERS

I am a researcher from the Centre for Sustainability in Mining and Industry (CSMI) at the University of the Witwatersrand conducting independent research.

Your name will not be used in any of the research, so you remain completely anonymous. Please feel free to speak openly.

You do not have to participate and can withdraw at any time.

This interview will take between 60-90 minutes. The focus group will be audio-taped in order to transcribe the information accurately.

Thank you for your participation.

Company/Mine:
……

Town/City: ……

Interviewer: ……

Date: ……

Focus group Start: …… Focus group ends: ……

NOTE: Check that no one in the focus group is presently holding the post of a workplace or fulltime H&S representative.

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We would like to start a discussion about the issue of health and safety and the role of the H&S representatives on this mine

1. Can you tell us about the place where you are working and the work you are doing there?

2. What is going well for you in your work at Rasimone mine at the moment?

3. What are the challenges you face in your work at Rasimone mine at the moment?

4. Can you give a personal experience when your workplace H&S rep has helped you? Explain what happened? (Ask each member of the focus group to share a story)

5. Can you give a personal experience when your workplace H&S rep was not able to help you? Explain why this was? (Ask each member of the focus group to share a story)

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6. What do you understand as the role of your workplace H&S rep on this mine?
    a. What must he do at the start of a shift?
    b. In the middle of a shift?
    c. At the end of the shift?
    d. Anything else?

7. From your experience what are the challenges that the workplace H&S representative faces?
    a. From workers?
    b. From supervisors?
    c. Others?

8. What changes, if any would you like to see made to the role of a workplace H&S rep? Why is this?

9. What do you understand as the role of the full time H&S rep on this mine? What do you understand as the difference between the full time and the workplace H&S rep?

10. What changes would you like to see made to the role of the full time H&S rep? Why is this?

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11. Has a health and safety representative withdrawn you from your workplace because he or she believed that an area is dangerous? Yes/No Was this the full time or workplace H&S rep? Describe what happened? Is there a reason why you had not removed yourself before the H&S representative withdrew workers?

12. Have you or a group of workers expressed reluctance to work to a health and safety representative because you think an area is dangerous? Yes/No If Yes what happened? Is there a reason why you had not removed yourself before asking the H&S representative?

13. In your experience in what ways do does a worker benefit (or not) from being a workplace H&S representative? Probe for extra money, cell phones, training

14. Based on your experience what qualities must a worker have if he or she is going to be a good workplace H&S representative?

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15. Based on your experience is there anything you would like to share about the selection of workplace H&S representatives?

16. In your experience what is the relationship between a workplace H&S representative and organized labour?

17. In your opinion how does a workplace H&S representative best represent the interests of workers?

Is there anything you would personally like to add?

……
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……

On behalf of the CSMI, thank you for your time. It is really appreciated.

CENTRE FOR SUSTAINABILITY IN MINING AND INDUSTRY
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APPENDIX 10: RESEARCH TOOLS QUARTER FOUR

A STUDY OF THE WORK AND PRACTICE OF HEALTH AND SAFETY (H&S) REPRESENTATIVES

Fourth Quarter In-Depth Interview: HEALTH AND SAFETY REPRESENTATIVE

(FULL-TIME)

I am a researcher from the Centre for Sustainability in Mining and Industry (CSMI) at the University of the Witwatersrand conducting independent research.

Your name will not be used in any of the research, so you remain completely anonymous. Please feel free to speak openly.

You do not have to participate and can withdraw at any time.

This interview will take between 60-90 minutes. The interviews will be audio-taped in order to transcribe the information accurately. A separate consent form will be provided for this.

Thank you for your participation.

Company/Mine:

……

Town/City: *……..*

Interviewee:**……**

Telephone No:**…….(Requested only for follow- up telephonic queries)**

Interviewer: *……*

Date: *……*

Interview Start: *…….* ***Interview ends:*** *……..*

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UNIVERSITY OF THE WITWATERSRAND

Participant code number: _____

1. Since we last met is there anything that you would like to tell me about?

2. Tell me about how you first got involved with organized labour

3. What are the goals of your union (AMCU or NUM) in relation to H&S?
    a. What is your union tackling well in relation to H&S?
    b. What are the weaknesses of your union in relation to H&S?
    c. How is the union responding to the growing numbers of contract workers?
    d. What is the relationship between what the union is trying to achieve for its members and H&S? Is there a time when H&S is used to achieve other goals for the union?

4. In your opinion what part of the mine H&S system does your union take responsibility for?
    a. For example; the election of H&S representatives and their training, development of mine policy and procedure, problem solving for H&S underground and on surface, making representation at the H&S committee? What else?

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5. How does your union help you in your role as an H&S representative?
    a. Do you have an example of when the union helped you as an H&S rep?
    b. How do other workers know you are an H&S representative? In what ways are you identified to them? (clothing, photo on board, ID card etc)
    c. Has the union assisted to you to get additional benefits as an H&S representative? Probe for bonus or additional payments, additional clothing, air time, gifts, braais etc

6. How can the union make your role as an H&S representative more difficult?
    a. Do you have an example you can share of when the union made your role more difficult?

7. How do you understand the role of shop stewards?
    a. What do they do for you, personally?
    b. What are their successes?
    c. What are their weaknesses?

8. What is the role of NUM/AMCU H&S shop stewards structure (chair, secretary, treasurer)?
    a. How does their role differ to yours?
    b. How (and when) did this structure start? How has this structure changed in the last 5 years

   c. Describe the communication between these reps and management?
   d. When do you meet with the H&S shop stewards? What brings you together?
   e. What changes if any would you like to see made to this structure?

9. How do you find the communication between H&S reps coming from different unions (eg. AMCU and NUM)?
   a. When and why would you meet?
   b. Can you think of times when you have worked well together? Give an example
   c. Can you think of times when you faced challenges working together? Give an example

10. Can you describe a time when you were involved with a Section 23 (Right to refuse dangerous work)?
   a. What happened? What was your role?
   b. At what point did the union get involved? Why then? Or why didn't they get involved?

11. Can you describe a time when you were involved with a Section 55 (Formal written notice from an inspector to address a non-compliance)? What happened? When was this? What was you role?
   a. What did the union want to see come out of this?
   b. At what point did the union get involved? Why then? Or why didn't they get involved?
   c. How did the union engage with the DMR inspectorate? How did the union engage with mine management? Who represented the union in each case?
   d. How did the problem get resolved?
   e. How did you feel about your role? Probe for details.

12. Can you describe a time when you were involved with a Section 54 (Section of a mine or the whole mine is closed)? What happened? When was this? What was your role?
    a. What did the union want to see come out of this?
    b. At what point did the union get involved? Why then? Or why didn't they get involved?
    c. How did the union engage with the DMR inspectorate? How did the union engage with mine management? Who represented the union in each case?
    d. How did the problem get resolved?
    e. How did you feel about your role? Probe for details.

13. In relation to Section 30 (role of an H&S rep) can you describe if you have done any of the following?
    a. Made a recommendation to the employer about H&S? If so, when was this describe how you did this and what happened
    b. Request and inspect a mine H&S document? If so, when was this describe how you did this and what happened
    c. Attend the H&S committee meeting? If so, when was this describe how you did this and what happened
    d. Request information from an inspector? If so, when was this describe how you did this and what happened
    e. With the approval of the employer request technical assistance or a technical advisor for a specific H&S problem? If so, when was this describe how you did this and what happened

f. Request an inspector to conduct an investigation? If so, when was this describe how you did this and what happened
g. Conduct an in-loco inspection? If so, when was this describe how you did this and what happened
h. Participate in an inquiry? If so, when was this describe how you did this and what happened

14. In relation to Section 31(Support to H&S rep)
    a. Are you given time every month to meet with workers and workplace H&S reps to discuss H&S? Can you describe when and how this happens
    b. What facilities and assistance do you think you need from management to fulfill your role as an H&S representative?
    c. What do you think will happen to you when you can no longer be an H&S rep?

15. In relation to Section 32?
    a. Describe how management informs you about inspections, investigations and inquiries requested by the DMR?
    b. When and how did this happen the last time?

16. In relation to a Section 11.5? (Appeal against a finding of unfit to perform work)
    a. Describe your role in this?
    b. When and how did this happen the last time?

17. In your experience what is the value of the mine H&S committee?

a. How are workers interests represented on this committee? Who speaks up on behalf of workers? (Is it the full time H&S reps or is it the union FT H&S reps)
b. How is worker participation on the mine H&S committee structured? In your opinion who must be there and why? What is happening in practice?
c. How do workers get to know what is discussed at the committee?
d. How is the worker representative who is the chair of mine H&S committee selected?

18. Have you experienced a dispute in your role as an H&S representative?
    a. When did this happen? Who was involved? What was it about?
    b. How did the matter get resolved?
    c. What is/was the role of HR in solving disputes related to H&S reps? What is the role of IR in solving disputes related to H&S reps?
    d. Has the CCMA ever assisted in involving a dispute related to being a H&S rep? What happened?

19. In relation to regulations 6
    a. How is the election committee being established here for the election of H&S reps?
    b. How do you as full time reps keep track of all the changes (resigning, being trained, untrained, retrenchments) happening with workplace reps?

20. What changes if any would you like to see made to the role and functions of H&S reps?

Is there anything you would personally like to add?

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UNIVERSITY OF THE WITWATERSRAND

……
……
……

On behalf of the CSMI, thank you for your time. It is really appreciated.

CENTRE FOR SUSTAINABILITY IN MINING AND INDUSTRY
UNIVERSITY OF THE WITWATERSRAND

A STUDY OF THE WORK AND PRACTICE OF HEALTH AND SAFETY (H&S) REPRESENTATIVES

Fourth Quarter In-Depth Interview: HEALTH AND SAFETY REPRESENTATIVE (WORKPLACE)

I am a researcher from the Centre for Sustainability in Mining and Industry (CSMI) at the University of the Witwatersrand conducting independent research.

Your name will not be used in any of the research, so you remain completely anonymous. Please feel free to speak openly.

You do not have to participate and can withdraw at any time.

This interview will take between 60-90 minutes. The interviews will be audio-taped in order to transcribe the information accurately. A separate consent form will be provided for this.

Thank you for your participation.

Company/Mine:
……

Town/City: ……

Interviewee:……

Telephone No:……(Requested only for follow- up telephonic queries)

Interviewer: ……

Date: ……

Interview Start: …… Interview ends: ……

Participant code number: _____

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UNIVERSITY OF THE WITWATERSRAND

1. Since we last met is there anything that you would like to tell me about?

2. Tell me about how you first got involved with organized labour

3. What are the goals of your union (AMCU or NUM) in relation to H&S?
    a. What is your union tackling well in relation to H&S?
    b. What are the weaknesses of your union in relation to H&S?
    c. How is the union responding to the growing numbers of contract workers?
    d. What is the relationship between what the union is trying to achieve for its members and H&S? Is there a time when H&S is used to achieve other goals for the union?

4. In your opinion what part of the mine H&S system does your union take responsibility for?
    a. For example the election of H&S representatives and their training of reps, development of mine policy and procedure, problem solving for H&S underground and on surface, making representations at the H&S committee? What else?

5. How does your union help you in your role as an H&S representative?
    a. Do you have an example of when the union helped you as an H&S rep?
    b. How do other workers know you are an H&S representative? In what ways are you identified to them? (clothing, photo on board, ID card etc)

   c. Has the union assisted to you to get additional benefits as a H&S representative? Probe for bonus or additional payments, additional clothing, air time, gifts, braais etc

6. How can the union make your role as an H&S representative more difficult?
   a. Do you have an example you can share of when the union made your role more difficult?

7. How do you understand the role of shop stewards?
   a. What do they do for you, personally?
   b. What are their successes?
   c. What are their weaknesses?

8. What is the role of NUM/AMCU H&S shop stewards structure(chair, secretary, treasurer)?
   a. How (and when) did this structure start? How has this structure changed in the last 5 years
   b. How is the communication between these reps and management?
   c. What is the difference between the union H&S shop stewards and the FT H&S reps?
   d. What changes if any would you like to see made to this structure?

9. How do you find the communication between H&S reps coming from different unions (eg. AMCU and NUM)?

a. When and why would you meet?
b. Can you think of times when you have worked well together? Give an example
c. Can you think of times when you faced challenges working together? Give an example. Why did you face challenges?

10. Can you describe a time when you were involved with a Section 23 (right to refuse dangerous work)?
    a. What happened? What was your role?
    b. At what point did the union get involved? Why then? Or why didn't they get involved?

11. Can you describe a time when you were involved with a Section 55 (formal instruction from an inspector to address a non-compliance)? What happened? When was this? What was you role?
    a. What did the union want to see come out of this?
    b. At what point did the union get involved? Why then? Or why didn't they get involved?
    c. How did the union engage with the DMR inspectorate? How did the union engage with mine management? Who represented the union in each case?
    d. How did the problem get resolved?
    e. How did you feel about your role? Probe for details.

12. Can you describe a time when you were involved with a Section 54 (instruction from an inspector to close a section or all of a mine) ? What happened? When was this? What was your role?
    a. What did the union want to see come out of this?

b. At what point did the union get involved? Why then? Or why didn't they get involved?
c. How did the union engage with the DMR inspectorate? How did the union engage with mine management? Who represented the union in each case?
d. How did the problem get resolved?
e. How did you feel about your role? Probe for details.

13. In relation to Section 30 (role of H&S rep)can you describe if you have done any of the following?
    a. Made a recommendation to the employer about H&S? If so, when was this describe how you did this and what happened
    b. Request and inspect a mine H&S document? If so, when was this describe how you did this and what happened
    c. Attend the H&S committee meeting? If so, when was this describe how you did this and what happened
    d. Request information from an inspector? If so, when was this describe how you did this and what happened
    e. With the approval of the employer request technical assistance or a technical advisor for a specific H&S problem? If so, when was this describe how you did this and what happened
    f. Request an inspector to conduct an investigation? If so, when was this describe how you did this and what happened
    g. Conduct an in-loco inspection? If so, when was this describe how you did this and what happened
    h. Participate in an inquiry? If so, when was this describe how you did this and what happened

14. In relation to Section 31(Support to a H&S rep) *(Optional question)*
    a. Are you given time every month to meet with workers and workplace H&S reps to discuss H&S? Can you describe when how this happens

b. What further facilities and assistance do you think you need from management to fulfill your role as an H&S representative?

15. In relation to Section 32? *(Optional question)*
    a. Describe how management informs you about inspections, investigations and inquiries requested by the DMR?
    b. When and how did this happen the last time?

16. In your experience what is the value of the mine H&S committee? *(Optional question)*
    a. How are workers interests represented on this committee? Who speaks up on behalf of workers? (Is it the full time H&S reps or is it the union FT H&S reps)
    b. How is worker participation on the mine H&S committee structured? In your opinion who must be there and why? What is happening in practice?
    c. How do workers get to know what is discussed at the committee?
    d. How is the worker representative who is the chair of mine H&S committee selected?

17. Have you experienced a dispute in your role as an H&S representative? *(Optional question)*
    a. When did this happen? Who was involved? What was it about?
    b. How did the matter get resolved?
    c. What is/was the role of HR in solving disputes related to H&S reps? What is the role of IR in solving disputes related to H&S reps?
    d. Has the CCMA ever assisted in involving a dispute related to being a H&S rep? What happened?

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UNIVERSITY OF THE WITWATERSRAND

18. What changes if any would you like to see made to the role and functions of H&S reps?

Is there anything you would personally like to add?

……
……
……

On behalf of the CSMI, thank you for your time. It is really appreciated.

CENTRE FOR SUSTAINABILITY IN MINING AND INDUSTRY
UNIVERSITY OF THE WITWATERSRAND

A STUDY OF THE WORK AND PRACTICE OF HEALTH AND SAFETY (H&S) REPRESENTATIVES

Fourth Quarter In-Depth Interview: HEALTH AND SAFETY REPRESENTATIVE

(Union Shop Steward H&S)

I am a researcher from the Centre for Sustainability in Mining and Industry (CSMI) at the University of the Witwatersrand conducting independent research.

Your name will not be used in any of the research, so you remain completely anonymous. Please feel free to speak openly.

You do not have to participate and can withdraw at any time.

This interview will take between 60-90 minutes. The interviews will be audio-taped in order to transcribe the information accurately. A separate consent form will be provided for this.

Thank you for your participation.

Company/Mine:
……

Town/City: ……

Interviewee:……

Telephone No:……(Requested only for follow- up telephonic queries)

Interviewer: ……

Date: ……

Interview Start: …… Interview ends: ……

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UNIVERSITY OF THE WITWATERSRAND

Participant code number: _____

1. How did you first get involved with mining? Tell me about how you first got involved with organized labour?

2. How did you first get involved in H&S?

3. Tell me about how you went on to hold this position?
    a. What was the process of selection? Was it specifically for H&S or for being a shop steward?
    b. Are you issued with an appointment letter? Under which piece of legislation is your appointment held? (Is it possible for this to be shared?)

4. How do you understand the responsibilities of your role?
    a. How did you find out about these responsibilities?
    b. What are the differences between the role of the chair, secretary, and treasurer? How are these differences communicated to you?
    c. How does your role overlap or differ with that of the FT H&S representatives appointed under the Mine Health and Safety Act?

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5. Can you describe how you spent your day yesterday?
    a. Was this a typical day? Why or why not?
    b. What would you say is the major part of your workload?
    c. Who do you report to during the day?

6. How would you describe your relationship with the FT and workplace H&S representatives?
    a. When and how often do you meet with the FT and or workplace H&S reps?

7. How would you describe your relationship with management? (production; safety ;medical; occupational hygiene)
    a. When and how often do you meet with management?

8. How would you describe your relationship with the DMR (Mine health and safety inspectorate)
    a. When and how often do you meet with inspectors?

9. What are the benefits to you personally of holding this post? (probe for increased pay, perks, office, cell phone time, training)

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UNIVERSITY OF THE WITWATERSRAND

10. What are the risks for you personally of holding this post?

11. In the last few years what changes do you think are happening in organized labour?
    a. Can you give examples of how things have changed?
    b. Probe for: membership; benefits; type of problems unions dealing with

12. How do you understand the role of shop stewards in this current environment?
    a. What are their successes?
    b. What are their weaknesses?
    c. What changes are happening to the role of shop stewards?

13. How would you describe the approach of your union (AMCU or NUM) to H&S?
    a. What are the H&S priorities of your union?
    b. What is your union tackling well in relation to H&S?
    c. What are the weaknesses of your union in relation to H&S?
    d. How is the union responding to the growing numbers of contract workers?
    e. What is the relationship between the what the union is trying to achieve for it's members and H&S? Can you give an example of this? (Listen for Is there a time when H&S is used to achieve other goals for the union?)

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14. What part of the mine H&S system does your union take full or part responsibility for?
    a. Probe for: election of H&S representatives, training of reps, development of mine policy and procedure, problem solving for H&S on the ground, making interventions at the H&S committee? What else?

15. How does your union branch/provincial/national structure help you in your role as an H&S representative?
    a. Do you have an example of when the union helped you as an H&S rep?
    b. How do other workers know you are an union H&S representative? In what ways are you identified to them? (clothing, photo on board, ID card etc)
    c. Has the union assisted to you to get additional benefits as a H&S representative? Probe for bonus or additional payments, additional clothing, air time, gifts, braais etc

16. How can the union branch/provincial/national structure make your role as an H&S representative more difficult?
    a. Do you have an example you can share of when your union made your role more difficult?

17. How do you find the relationship between H&S reps coming from different unions (eg. AMCU and NUM)?
    a. When and why would you meet?
    b. Can you think of times when you have worked well together? Give an example

c. Can you think of times when you faced challenges working together? Give an example

18. Can you describe a time when you were involved with a Section 23 (right to refuse dangerous work)? What happened? What was your role?

19. Can you describe a time when you were involved with a Section 55 (inspectorate formal notice to correct a non-compliance)? What happened? When was this? What was you role?

20. Can you describe a time when you were involved with a Section 54? What happened? When was this? What was your role?

21. In relation to Section 30 can you describe if you have done any of the following?
    a. Made a recommendation to the employer about H&S? If so, when was this describe how you did this and what happened
    b. Request and inspect a mine H&S document? If so, when was this describe how you did this and what happened
    c. Attend the H&S committee meeting? If so, when was this describe how you did this and what happened
    d. Request information from an inspector? If so, when was this describe how you did this and what happened

e. With the approval of the employer request technical assistance or a technical advisor for a specific H&S problem? If so, when was this describe how you did this and what happened
f. Request an inspector to conduct an investigation? If so, when was this describe how you did this and what happened
g. Conduct an in-loco inspection? If so, when was this describe how you did this and what happened
h. Participate in an inquiry? If so, when was this describe how you did this and what happened

22. In relation to Section 31
    a. Are you given time every month to meet with workers and workplace H&S reps to discuss H&S? Can you describe when how this happens
    b. What facilities and assistance do you think you need from management to fulfill your role as an H&S representative?
    c. What do you think will happen to you when you can no longer be an H&S rep?

23. In relation to Section 32?
    a. Describe how management informs you about inspections, investigations and inquiries requested by the DMR?
    b. When and how did this happen the last time?

24. In relation to a Section 5?
    a. Describe your role in this?
    b. When and how did this happen the last time?

25. In your experience what is the value of the mine H&S committee?
    a. How are workers interests represented on this committee? Who speaks up on behalf of workers? (Is it the full time H&S reps or is you?)
    b. How is worker participation on the mine H&S committee structured? In your opinion who must be there and why? What is happening in practice?
    c. How do workers get to know what is discussed at the committee?
    d. How is the worker representative who is the chair of mine H&S committee selected?

26. Have you experienced a dispute in your role as an H&S representative?
    a. When did this happen? Who was involved? What was it about?
    b. How did the matter get resolved?
    c. What is/was the role of HR in solving disputes related to H&S reps? What is the role of IR in solving disputes related to H&S reps?
    d. Has the CCMA ever assisted in involving a dispute related to being a H&S rep? What happened?

27. In relation to regulations 6
    a. How is the election committee being established here for the election of H&S reps?
    b. How do you as full time reps keep track of all the changes (resigning, being trained, untrained, retrenchments) happening with workplace reps?

28. What changes if any would you like to see made to the role and functions of H&S reps?

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Is there anything you would personally like to add?

……
……
……

On behalf of the CSMI, thank you for your time. It is really appreciated.

Concurrent mixed methods study

APPENDIX 11: PARTICIPANT INFORMATION SHEET

A STUDY OF THE RIGHT TO LEAVE A DANGEROUS WORKPLACE AS SET OUT UNDER THE MINE HEALTH AND SAFETY ACT

I am _____, a researcher at the Centre for Sustainability in Mining and Industry (CSMI), which is located in the School of Mining Engineering at the University of the Witwatersrand. The contact person (principal investigator) for the study is Nancy Coulson. Her office number is 011 -717 7054 and email address is Nancy.Coulson@wits.ac.za

This study was commissioned by the Mine Health and Safety Council. It aims to explore the practice of the right to leave a dangerous workplace as set out under the Mine Health and Safety Act No. 29 of 1996 as amended.

The purpose of the study is to present a full account of stakeholder perspectives (mine managers (all levels) government through the Mine Health and Safety Inspectorate and employees including health and safety representatives and organised labour)on the practice of the right to leave a dangerous workplace. In particular the study will focus on employee experience and knowledge of the right to leave a dangerous workplace. The study will examine the knowledge and experience of stakeholders across different mining commodities and large and small scale mines in South Africa.

Issues to be explored and documented include stakeholder understanding of what the right covers, how and when the right is exercised and the factors that hinder or facilitate this practice.

We would appreciate your participation in the study. Participation is voluntary, and you are welcome to refuse to participate or to stop the interview at any point. There is no penalty for not participating in the study. There is no payment for participation in this study. You will remain anonymous in any report generated by the study, unless you give us permission to quote you anonymously or by name in the informed consent. The records of the interviews will be kept confidential by the researchers.

You are welcome to contact the Centre for Sustainability in Mining and Industry (CSMI), about any queries or concerns you may have about the study or this interview, or if you have any further information that has come to light and you would like to share with us.

Centre for Sustainability in Mining and Industry, University of the Witwatersrand
Nancy Coulson
2013





INFORMED CONSENT
Study of The Right to Leave a Dangerous Workplace

I, _____, consent to participate in a research project conducted by the CSMI of the University of the Witwatersrand. I understand that this research is about the practice of the Right to Leave a Dangerous Workplace as set out under the Mine Health and Safety Act.

1. My participation in this research is voluntary.
2. I understand that I will not be paid for my participation.
3. I understand if I feel uncomfortable in any way during the interview/focus group discussion session, I have the right to decline to answer any question or to end the interview/focus group discussion or to withdraw my consent to participate.
4. Participation involves being interviewed by a researcher from the CMSI.
5. The interview will last approximately 1 hour and may be extended with my permission. Notes will be written during the interview.
6. I agree / do not agree to audio taping of the interview (Delete one option.)
7. The identity of interviewees will be kept confidential.
8. I understand that this research study has been reviewed and approved by the Research Ethics Committee of the University of the Witwatersrand.
9. I understand the objectives of this research project which have been explained and provided to me.
10. I have been given a copy of this consent form.

Study Participant Name and Signature: _____

Researcher Name and Signature: _____

APPENDIX 12: RESEARCH TOOLS

In-Depth Interview: HEALTH AND SAFETY REPRESENTATIVE

We are independent researchers from the CSMI at the University of the Witwatersrand conducting research for a statutory body, Mine Health and Safety Council.

No names are asked, so you remain completely anonymous. Please feel free to speak openly.

You do not have to participate and can withdraw at any time.

We thank you for your willingness to participate in this important research exercise which aims to contribute to a healthier and safer working environment in South African mines and industry.

Company/Mine: ……

Town/City: ……..

Interviewee:……

Telephone No:…….(Requested only for follow- up telephonic queries)

Interviewer: ……

Date: ……

Interview Start: ……. Interview ends: ……..

_____

Official position of interviewee: …….

How many years have you held this position…… Years in mining industry ……..

Are you full or part time Health and Safety Rep? FT/PT please circle

What job did you do before, or do now on this mine? …….

Do you mind if we use a tape recorder? Let me stress that you will remain completely confidential.

We would like to start by asking you about the issue of Health and Safety and the Right to Leave a Dangerous Workplace (RLDW) in general.

Where there are specific questions and detail requested with which you are not familiar at Senior level we would appreciate if you could refer us to the appropriate personnel on the shaft.

Background

1 How did you become a H&S representative?

……
……
……

2 How do you understand your role?

……
……
……
……..

Health and safety priorities and practice

3 What are the health and safety priorities on this mine?
……
……
……

4 What do you think is working well at the moment for health and safety on your mine?
……
…….....

5 What are the challenges senior management on this mine faces in implementing the requirements of the Mine Health and Safety Act to address health and safety priorities
……
……

6 What training is provided on this mine to employees about health and safety? (probe for how often, and when this happens) (induction training, refresher training and tool box/waiting place talks)
……
……
……

7 What specific training have you had as a Health and Safety Rep?
……
……
When? ……..
Where?.....How long was the training? ……

8 How are incidents reported at this mine? (Probe for injury and near miss incidents)
……
……

9 Which structures/individuals read and respond to incident reports? (both injury and near miss incidents)
……
……

10 Do you serve on the Health and Safety Committee of this mine? Yes /No

11 Do you receive the minutes of such meetings? Yes / No

12 Do you have a copy of the health and safety policy at this mine? Yes / No
If **Yes**: Could we researchers get a copy?

13 Do you know the latest Health and Safety statistics for this mine over the past 12 months? Yes / No If, Yes describe them
.....

The Procedure for the Right to Leave a Dangerous Workplace

14 Is there a procedure for the RLDW on this mine? Yes / No (Circle whichever is applicable)

15 What are the steps in this procedure?
……
……

16 What is your role in this procedure?
……
……
……

17 How was the procedure developed? (Probe for a company instruction, borrowed from an international guideline, other?)
……
……

18 Who was involved with the development of the procedure? (probe for H&S mine personnel, labour representatives, H&S Reps, outside consultants, other)
……
……

19 Is it in your powers as a Health and Safety Rep to withdraw workers form a dangerous workplace? Yes / No

20 If **Yes to Q17**: Have you ever done so? If **Yes**: Please describe the circumstances and what happened
……
……
……
……
……

21 Can workers withdraw from a dangerous workplace even if you as the Health and Safety Rep do not agree? Yes / No

22 Has your union signed a Collective Agreement (CA) with management in terms of Chapter 3 of the MHS Act regarding employee participation in health and safety (Health and Safety Committees)? Yes / No
……..

23 If **Yes to Q20**: Who could provide us with a copy? Does the CA include the issue of the RLDW? Yes / no / don't know
……

24 If **Yes to Q21**: What challenges did you face in preparing the CA and specifically the component addressing the RLDW?

……
……

25 What training is provided to employees about the RLDW? (Probe for when, how often and what is covered)

26 Have you as a Health and Safety Rep ever had specific training on the issue of the RLDW? Yes / No

If **Yes**
When? ……..
Where?.....How long was the training? …….

27 Is any other media made available to workers to inform them about the procedure for the RLDW? Yes / No

28 If **Yes to Q25**: then please provide details
……
……

The practice of the RLDW

29 Have you had a case at this mine where workers refused to work because they thought the workplace was too dangerous? Yes / No (During your time as a health and safety rep or before your time)
……

30 If **Yes to Q27**: When did this happen? And what were the circumstances?
……
……
Do you know what happened after that?
……
……

Was the incident documented? Yes/No If **Yes**, Who could supply us with a copy of the incident report?

31 If **Yes to Q27.** At the time, did you think in this specific incident, the employees concerned were justified in refusing to work? Yes / No

If **Yes, why?** and if **No, why not?**
……
……

32 Have workers ever left a workplace because they thought it was dangerous and you did not agree? Yes / No

If **Yes to Q30**:

When did this happen?.....

……

What were the circumstances?
……..

……

Do you know what happened after that?

……
…….....

Was the incident documented? Yes/No If **Yes,** Who could supply us with a copy of the incident report?

33 Have you requested workers to leave a workplace because you thought it was dangerous? Yes / No

If **Yes to Q31**:

When did this happen?.....

……

What were the circumstances?
……..

……

Do you know what happened after that?

……
…….....

Was the incident documented? Yes/No If **Yes,** Who could supply us with a copy of the incident report?

34 If **Yes to Q27 and/or Q30 and Q31**: Do you think the procedures for the RLDW are adequate? Yes / No
Why? or **why not?**
……
……
……

35 In your role as a Health and Safety Rep, how would an event of the RLDW reach you?
……
……
What would you do?
……
……

36 Are there times when employees here have expressed *reluctance* to work? Yes/No

If **Yes to Q34**: how did you come to hear about it? And how was the issue presented to you? What did you do?
……
……

37 In the event of an expression of the *reluctance* to work, does this incident get reported? Yes / No

38 If **Yes to Q35**: To whom is it reported and is it recorded? Who on the mine could supply us with copies of such reports?
(Obtaining this data would greatly facilitate our research in the interests of H&S in the mines)
……
……

39 What do you think might hinder employees from exercising the RLDW?
……
……
……

40 What do you think can facilitate employees exercising the RLDW?
……
……

41 In general in your role as a H&S representative what is going well in your relationship with workers?
……
……
……

42 What are the challenges you face in your relationship with workers?
……
……
……..

Is there anything you would personally like to add regarding RLDW?

……
……

On behalf of the MHSC and the CSMI, thank you for your time. It is really appreciated.

In-Depth Interview: TRADE UNION OFFICIAL (Branch or Regional Level)

We are independent researchers from the CSMI at the University of the Witwatersrand conducting research for a statutory body, Mine Health and Safety Council.

No names are asked, so you remain completely anonymous. Please feel free to speak openly.

You do not have to participate and can withdraw at any time.

We thank you for your willingness to participate in this important research exercise which aims to contribute to a healthier and safer working environment in South African mines and industry.

Company/Mine: ……

Town/City: ……..

Interviewee:……

Telephone No:…….(Requested only for follow- up telephonic queries)

Interviewer: ……

Date: ……

Interview Start: ……. Interview ends: …….

_____

Official position of interviewee: …….

How many years have you held this position…… Years in mining industry ……..

Do you mind if we use a tape recorder? Let me stress that you will remain completely confidential.

We would like to start by asking you about the issue of Health and Safety and the Right to Leave a Dangerous Workplace (RLDW) in general.

Health and safety priorities and practice

1 What are the health and safety priorities on this mine – and on others in this Region?
……
……
……

2 What do you think is working well at the moment for health and safety on this mine and/or in the Region?
……
……

3 What are the challenges organised labour faces in implementing the requirements of the Mine Health and Safety Act to address health and safety priorities
……
……

4 What training is provided to your members about health and safety? (probe for how often and when this happens) (induction training, refresher training and tool box/waiting place talks)

……
……
……

5 How are incidents reported at the mine? (Probe for injury and near miss incidents)

……
……

6 Which structures/individuals read and respond to incident reports? (both injury and near miss incidents)

……
……

7 Can we (the researchers) have a copy of any health and safety policy and/or materials your union might have produced?

.....

The Procedure for the Right to Leave a Dangerous Workplace

8 Is there a procedure for the RLDW on this mine (or any other mine in this Region) ? Yes / No (Circle whichever is applicable)

9 What are the steps in this procedure?

……
……
……

10 How do you understand the practice of the Right to Leave a Dangerous workplace (RLDW) fitting in to your Health and Safety framework?

……
……

11 How was your procedure developed? (Probe for a company instruction, borrowed from an international guideline, other?)

……
……

12 Who was involved with the development of your procedure? (probe for H&S mine personnel, labour representatives, outside consultants, other)

13 Has your trade union signed a Collective Agreement (CA) with management in terms of Chapter 3 of the MHS Act regarding worker participation in health and safety (Health and Safety Committees)? Yes / No (Circle whichever is applicable)

……..

14 If **Yes to Q13**: Who could provide us with a copy? Does the CA include the issue of the RLDW? Yes / no / don't know

……

15 If **Yes to Q13**: What challenges did you face in preparing the CA and specifically the component addressing the RLDW?

……
……

16 What training is provided to workers about the RLDW? (Probe for when, how often and what does the training cover?)
……
……

17 Is any other media made available to employees to inform them about the procedure for the RLDW? Yes / No

18 If **Yes to Q17**: then please provide details
……
……

The practice of the RLDW

19 Have you had a case at this mine or in this Region where members refused to work because they thought the workplace was too dangerous? Yes / No (Either during your time in this Region or before your time)
……

20 If **Yes to Q19**: When did this happen? And what were the circumstances?
……
……
Do you know what happened after that?
……
……

Was the incident documented? If **Yes**, Who could supply is with a copy of the incident report?

21 If **Yes to Q19.** At the time, did you think that in this specific incident, the workers concerned were justified in refusing to work? Yes / No

If **Yes, why?** and if **No, why not?**
……
……

22 If **Yes to Q19**: Do you think the procedures for the RLDW are adequate? Yes / No **Why?** or **why not?**
……
……
……

23 In your role as trade union official has an actual event of the RLDW ever reached you? Yes / No

24 If **Yes to Q23**: How did you come to hear about it? And how was the issue presented to you? What did you do?

……
……

25 Are there other times when employees here have expressed *reluctance* to work? Yes/No

If **Yes to Q25**: how did you come to hear about it? And how was the issue presented to you? What did you do?
……
……

26 In the event of an expression of the *reluctance* to work, does this incident get reported? Yes / No

27 If **Yes to Q26**: To whom do they report and is it recorded? Who on the mine could supply us with copies of such reports?
(Obtaining this data would greatly facilitate our research in the interests of H&S in the mines)
……
……

28 What do you think might hinder workers from exercising the RLDW?
……
……
……

29 What do you think can facilitate workers exercising the RLDW?
……
……

Is there anything you would personally like to add regarding RLDW?

……
……

On behalf of the MHSC and the CSMI, thank you for your time. It is really appreciated.

Focus Group: PRODUCTION WORKERS

We are independent researchers from the CSMI at the University of the Witwatersrand conducting research for a statutory body, Mine Health and Safety Council.

No names are asked, so you remain completely anonymous. Please feel free to speak openly.

You do not have to participate and can withdraw at any time.

We thank you for your willingness to participate in this important research exercise which aims to contribute to a healthier and safer working environment in South African mines and industry.

Company/Mine: ……

Town/City: ……..

Interviewer: ……

Date: ……

Interview Start: ……. Interview ends: …….

_____

Notes to interviewer:

Find out the terminology and language used at an individual mine site for:

Withdrawal (and or removal) of workers from an unsafe area and/or the right to refuse dangerous work. The preferred term should be found in the occupational health and safety agreements/ documents for a specific mine. The occupational health and safety manager and/or other management should also be able to provide these terms. Note the withdrawal/removal/right to refuse dangerous work may be included in risk management terms such as STOP and/or SLAM (stop, look, analyse and manage).

OCCUPATIONS OF ALL MEMBERS OF FOCUS GROUP:

Form to be completed

Do you mind if we use a tape recorder? Let me stress that you will remain completely confidential.

We would like to start a discussion about the issue of Health and Safety and the Right to Leave a Dangerous Workplace (RLDW) in this mine.

General

1. Can you tell us about the place where you are working and the work you are doing there?
   ……
   ……
   ……
   ……
2. What is going well for you in your work at the moment?
   ……
   ……

……
……

3. What are the challenges you face in your work at the moment?
……
……
……
……

Early examination

4. What happens at the start of a work shift at this mine?
……
……
……
……

5. During early examination making safe what actions do you take when encountering problems with the following:

Gas

Airflow

Temperature

Dust:

Hanging wall/roof and support:

Any other problems you encounter:

6. Are these actions effective? Please explain
……
……
……

7. Were you trained to take these actions? Please explain
   ……
   ……
   ……

8. What do you do if there is something not right about the workplace before starting work that is too big for you to deal with on your own?

   For Gas

For Airflow

   For dust:

For fumes (blasting fumes and diesel exhaust)

For temperature:

For Hanging wall/roof and support:

Any other problems you encounter:

9. Do you know what your supervisor expects you to deal with, and when he expects you to call him?

Does this work well? Why or why not?

……
……
……

10. How would you know when it is too dangerous to start working? Please explain

    For gas

    For airflow

    For dust:

    For fumes (blasting fumes and diesel exhaust)

    For temperature:

    For hanging wall/roof and support

    Any other problems you encounter

11. What happens in the event of it being too dangerous to work?
    ……
    ……
    ……

12. Do you report this and to whom do you report this?
    ……
    ……
    ……

13. What happens
    then?……
    ……
    ……
    ……

14. Have you ever felt like refusing to work at the start of a shift because it was dangerous, but worked anyway? Could you tell us more about this kind of situation?

……
……
……

15. Why did you work even if it was dangerous? How often might this happen to you?

……
……

16. What are the things that make you think about withdrawing from the workplace (refusing to work)?

……
……
……

During the shift

17. What do you do if any of the following changes happen during your shift at work?

    It feels hotter in the workplace

    It feels like there is a change in the airflow

    There is more dust in the air

    There are more fumes in the air

    The hanging wall/roof deteriorates or looks worse

    A team member acts in a manner that can or could endanger other members of the team

    Any other similar problem

18. What happens in the event of it becoming too dangerous to work?

……
……
……

19. Do you report this and to whom would you report? Can you describe an example of this?
    ……
    ……
    ……
20. What happens then? What happened in the example you describe?

    ……
    ……
    ……
    ……

21. Have you ever felt like refusing to work during a shift because it was dangerous, but worked anyway? Why did you work even if it was dangerous? How often might this happen to you?
    ……
    ……
    ……
    ……

……
……

22. Have you experienced any differences between night shift and day shift with respect to finding dangerous conditions at the workplace? Can you give examples of this
……
……
……

23. Have you experienced any differences between night shift and day shift with respect to the response to dangerous conditions at the workplace? Can you describe this
……
……
……

The practice of the RLDW

24. Has anyone here exercised the legislative RLDW? (Indicate number of people who respond "yes")
……..

25. If Yes to Q24: What happened?
……
……
……
……

26. If Yes to Q24: Do you think the procedures for dealing with the incident were adequate?
……
……
……
……

27. What have other workers at this mine said to you about not wanting to work because it is too dangerous?
……
……
……
……
……

28. Has a supervisor or manager withdrawn you from the workplace because he or she believed that an area is dangerous? Yes/No

29. If Yes to Q 28: What happened?
……
……
……
……
……

30. Has a health and safety representative withdrawn you from the workplace because he or she believed that an area is dangerous? Yes/No

31. If Yes to Q 30: What happened?

……
……
……
……
……

32. Have you or a group of workers expressed reluctance to work to a health and safety representative because you think an area is dangerous? Yes/No

33. If Yes to Q 32: what happened? (probe for whether reps have sufficient power/credibility, knowledge/expertise)

……
……
……
……
……
……
……
……
……

34. What is the role of the H&S representative? How was your H&S representative selected? Is your H&S representative fulltime or a part time representative?

……
……
……

35. How does your H&S representative help you?

……
……
……

36. How does your H&S representative not help you?

……
……
……

37. How is In your time working as miners both here and at other sites, do you recall any incidents where RLDW was not taken seriously by mine management? If so, what happened as a consequence?

……
……
……

The Procedure for the Right to Leave a Dangerous Workplace

38. How do you understand the issue of the Right to Leave a Dangerous Workplace (RLDW)? (Probe for who is covered by this right and when it can be used, including co-workers who act dangerously or irrationally and being asked to perform a hazardous task)

……
……

……
……

39. What are the steps of the procedure?

……..

……
……

40. How was the procedure communicated to you? What language was used?

……
……
……

Is there anything you would personally like to add regarding RLDW?

……
……

On behalf of the MHSC and the CSMI, thank you for your time. It is really appreciated.

RRDW SURVEY

INTRODUCTION

WE HAVE BEEN COMMISSIONED BY THE MINE HEALTH AND SAFETY COUNCIL (MHSC) TO CONDUCT A SURVEY TO GAIN A BETTER UNDERSTANDING FROM SELECTED WORKERS AND MANAGEMENT OF THE WORKING CONDITIONS AT THIS MINE. THE AIM OF THE PROJECT IS TO CONTRIBUTE TO A HEALTHIER AND SAFER WORKING ENVIRONMENT IN THE MINING INDUSTRY. WE ARE UNDERTAKING SIMILAR EXERCISES AT OTHER MINES IN THE AREA.

PLEASE NOTE THAT THE INFORMATION YOU GIVE US IS CONFIDENTIAL AND YOUR NAME WILL NOT BE RECORDED AND YOUR PARTICULAR ANSWERS WILL NOT BE PASSED ON TO ANYONE ELSE. YOUR ANSWERS WILL BE PUT TOGETHER WITH THE ANSWERS GIVEN BY OTHERS IN ORDER FOR AN OVERALL ASSESSMENT OF THE WORKING CONDITIONS AT THIS MINE TO EMERGE. PLEASE FEEL FREE TO SAY EXACTLY WHAT YOU WANT TO SAY IN RESPONSE TO THE QUESTIONS THAT I AM GOING TO ASK YOU.

INTERVIEWER: RECORD DETAILS FOR Q.1 - Q.4 FROM EMPLOYEE RECORDS/OBSERVATION

1. **MINE**

Gold	1
Platinum	2
Coal/other	3

2. **RACE:**

African	1	Coloured	3
Indian	2	White	4

3. **SEX:**

Male	1	Female	2

4. **LEVEL:**

Worker	1
Supervisor *(includes team leader, miner, shift overseer/boss)*	2
Manager *(includes mine overseer, section manager, section engineer, mine manager/CEO/GM, occupational health and safety manager)*	3

[ASK ALL]

5. To start off with, I would like to ask you a couple of questions about your life in general. Please listen to the following statements and tell me whether you strongly agree, agree, neither agree nor disagree, disagree or strongly disagree with each statement.

[READ OUT EACH OPTION AND RECORD RESPONSE]

Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
In general, I am happy with the way my life is at the moment	1	2	3	4	5
People like me cannot influence developments in my workplace	1	2	3	4	5
I would rather work somewhere else than here	1	2	3	4	5
No one cares about people like me	1	2	3	4	5

6. Now I would like to ask you some general questions about yourself. Firstly, could you please tell me how old you are?

..... ( )

7. Are you a South African citizen?

Yes	1
No	2
Don't know	3

8. How many years have you been living in this area around the mine?

..... ( )

9. Do you regard this area as your home?

Yes	1
No	2
Don't know	3

10. Let us now focus on your current working life for a while. What is your current job here?
[WRITE RESPONSE IN SPACE PROVIDED – CODING WILL TAKE PLACE AT A LATER STAGE]

_____

11. Are you an employee or a contractor?

Employee	1
Contractor	2

12. a. How long have you worked in the mining industry?
b. How long have you worked at this particular mine?
[DO NOT READ OUT – SINGLE MENTION FOR EACH QUESTION]

	Q12a	**Q12b**
Less than a year	1	1
1-2 years	2	2
3-5 years	3	3
6-10 years	4	4
More than 10 years	5	5

13. How do you **first** hear about important developments at work?
[DO NOT READ OUT – SINGLE MENTION]

Mass meeting	1
Other workers	2
Supervisor	3
Directly from a management representative	4
Trade Union/Association	5
Company memo/email/video/brochure/etc.	6
Other	7

14. Who do you **mainly** trust to give you accurate information on such developments?
[DO NOT READ OUT – SINGLE MENTION]

Other workers/colleagues	1
Supervisor	2
Management	3
Trade Union/Association	4
Other	5
No one	6
Don't know	7

15. Let's now focus on issues related to productivity. In your job, do you have **targets** that you have to meet say on a daily, weekly or monthly basis?

Yes	1	**GO TO Q16**
No	2	**GO TO Q17**
Don't know	3	**GO TO Q17**

16. There are a number of factors that can affect whether or not targets are met. **Thinking about your own job and the targets that you need to meet,** please tell me whether you think each issue I mention is a big problem, a small problem or not a problem at all in meeting your targets?
[READ OUT EACH OPTION AND RECORD RESPONSE]

	Big problem	**Small problem**	**Not a problem**	**Don't know**
Level of skills among workers	1	2	3	4
Rate of absenteeism among workers	1	2	3	4
Relations between supervisors and workers	1	2	3	4
Safety conditions	1	2	3	4

Machinery and equipment	1	2	3	4
Availability of materials to do the job	1	2	3	4

17. **[ASK ALL]**
Let us think about issues of health and safety where you work. How important do you think issues of health and safety are at this mine?
[READ OUT – SINGLE MENTION]

Very important	1
Rather important	2
Neither important nor unimportant	3
Rather unimportant	4
Very unimportant	5

18. How safe do you feel at work?
[READ OUT – SINGLE MENTION]

Very safe	1
Rather safe	2
Neither safe nor unsafe	3
Rather unsafe	4
Very unsafe	5

19. Have you been trained in the last 12 months to identify hazards in the workplace?

Yes	1
No	2
Don't know	3

20. Have you worked underground in the last 12 months?

Yes	1	**GO TO Q21**
No	2	**GO TO Q23**
Don't know	3	**GO TO Q23**

21. Have you received training on any of the following concerns in the last 12 months?
[READ OUT EACH OPTION AND RECORD RESPONSE]

	Yes	**No**	**Don't know**
Detecting flammable gases	1	2	3
Temperature increase	1	2	3
Checking the airflow	1	2	3
Controlling dust	1	2	3
Blasting fumes	1	2	3
Hanging wall conditions	1	2	3
Support standards	1	2	3

22. **[If YES to any in Q21]**
What impact has this training had on your health and safety while you are working?
[READ OUT – SINGLE MENTION]

Very positive impact	1
Positive impact	2
No real impact	3
Negative impact	4
Very negative impact	5

23. **[ASK ALL]**
Is there a Health & Safety committee on this mine?

Yes	1	**GO TO Q24**
No	2	**GO TO Q25**
Don't know	3	**GO TO Q25**

24. What impact have they had on your health and safety at this mine?
[READ OUT – SINGLE MENTION]

Very positive impact	1
Positive impact	2
No real impact	3
Negative impact	4
Very negative impact	5

25. **[ASK ALL]**
Do you have access to a copy of the health and safety policy at this mine?

Yes	1
No	2
Don't know	3

26. Do you have access to a report of the latest Health and Safety statistics for this mine over the past 12 months?

Yes	1
No	2
Don't know	3

27. Have you ever felt the situation was so dangerous at your workplace that you did not want to work?
[READ OUT]

Yes	1	**GO TO Q28**
No	2	**GO TO Q32**
Don't know	3	**GO TO Q32**

28. What year was this?

..... ( )

29. Who, if anyone, did you discuss your concerns with?
[DO NOT READ OUT – RECORD MULTIPLE RESPONSES]

	YES	**NO**
Fellow workers	1	2
Union reps	1	2
Supervisor	1	2
Management	1	2
H&S reps/committee	1	2
Other	1	2
No-one	1	2

30. Do you think the procedures for dealing with your concerns were adequate?

Yes	1
No	2
Don't know	3

31. Did you end up going to the workplace even though you thought it was still dangerous?

Yes	1
No	2
Don't know	3

32. **[ASK ALL]**
Has a Health & Safety representative ever asked you to not work or stop working because of it being too dangerous?

Yes	1
No	2
Don't know	3

33. Do you know of any other situation at this mine where workers refused to work because they thought it was too dangerous?

Yes	1	**GO TO Q34**
No	2	**GO TO Q36**
Don't know	3	**GO TO Q36**

34. What year was this?

..... ( )

35. Did they end up going to the workplace even though they thought it was still dangerous?

Yes	1
No	2
Don't know	3

36. **[ASK ALL]**
Have you ever heard of the Right to Leave a Dangerous Workplace? **[READ OUT]**

Yes	1	**GO TO Q37**
No	2	**GO TO Q39**
Don't know	3	**GO TO Q39**

37. Do you know if this mine has a procedure on the Right to Leave a Dangerous Workplace?

Yes	1
No	2
Don't know	3

38. Have you ever received any training at this mine on the Right to Leave a Dangerous Workplace?

Yes	1
No	2
Don't know	3

39. **[ASK ALL]**
We are getting near the end now. Please listen to what other people have said about issues of health and safety where they work and tell me whether you strongly agree, agree, neither agree nor disagree, disagree or strongly disagree with each statement.
[READ OUT EACH OPTION AND RECORD RESPONSE]

Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Management doesn't take health and safety issues seriously	1	2	3	4	5
Workers say that a workplace is dangerous so that they don't have to work	1	2	3	4	5
Workers don't really have the right to refuse to do dangerous work at this mine	1	2	3	4	5
Production is always more important than health and safety	1	2	3	4	5

40. Thinking about your future at this mine in the next ten years, how confident are you that you and your family will live a better life – very confident, confident, not sure, not confident or not at all confident?

Very confident	1
Confident	2
Not sure	3
Not confident	4
Not at all confident	5

41. A final question. Is there anything else you would like to tell me about the right to refuse dangerous work?

.....

.....

.....

.....

.....

THANK YOU VERY MUCH FOR YOUR TIME.
[CLOSE INTERVEW]

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The role of workplace health and safety representatives and the creeping responsibilisation of occupational health and safety on South African mines

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ABSTRACT

ILO Convention 176 provides for worker selected health and safety representatives (HSRs) with which the South African Mine Health and Safety Act (MHSA) No 29 of 1996 as amended complies. Although arrangements for worker consultation is well established in other industrialised contexts worldwide, it is threatened by neo-liberalism and a trend within occupational health and safety (OHS) regulation described as *'responsibilisation.'* This paper examines the experience of South African HSRs in relation to this globalised context. In-depth, semi-structured interviews (n = 37) and short telephone interviews (n = 53) were conducted at four large underground mines (platinum, gold and diamond) with workplace HSR (n = 25) between February 2015 and June 2016. Interviews explored HSR perceptions of their preparation, day-to-day activities, context and experience of OHS transgressions. Interviews were translated, transcribed and thematically analysed (Max QDA 12). A four domain framework was developed to encapsulate the experience of HSRs, that left them feeling accountable, or having to account, for the OHS transgressions of co-workers, and in some instances, facing employer action against themselves. The term *'creeping responsibilisation'* was introduced to describe the slide towards HSRs holding responsibility for OHS transgressions in place of the employer. The pre-conditions for autonomous worker representation in South Africa are judged to be insufficient which holds lessons for other African states wishing to strengthen their own commitments to OHS.

1. Introduction

The African Union (AU), Mining Vision (2009) charts the way forward for mining on the continent, as a road towards economic development and industrialisation, albeit not at the expense of a *"sustainable and well governed"* sector, that is amongst other criteria *"safe"* and *"healthy"* (African Union, 2016). Over the last decade, the rush for economic growth on the African continent, where the pressure for job creation and poverty alleviation is palpable, can deflect attention away from the goal of a safe and health workplace. Occupational health and safety (OHS) has a poor base in Africa, especially if the workplace is hazardous. In many instances, OHS legislation is incomplete or outdated, there is a lack of enforcement by labour inspectorates, and reported data on accidents and occupational disease is low (Alli, 2008). As a consequence, strengthening a complementary vision for the effective delivery of OHS in African mining is crucial to meeting the aspirations of the AU.

The post 2015 Millennium Development Goals' context has propelled the ILO Decent Work Agenda centre stage through its endorsement in new Sustainable Development Goal (SDG) #8 (ILO, 2015). This Goal sets out to right the inequalities of globalisation and recognises the centrality of workplace OHS to do this. The ILO has a series of conventions, recommendations and codes of practice in support of this, of which the most important convention in mine OHS, is the Safety and Health in Mines Convention 176, 1995 (ILO, 1995). Embedded in C176 are tripartism for sound governance, and the protection of worker rights, including the freedom of association and the right to collective bargaining, and OHS rights such as the right to refuse dangerous work. C176 acknowledges the rights of workers to, *"genuine consultation on and participation in the preparation and implementation of safety and health measures,"* (Preamble) and Article 13 thereof, provides workers with the right to collectively select health and safety representatives (HSRs). However ratification of C176 is limited in Africa (six countries only; South Africa, Botswana, Zambia, Zimbabwe, Morocco and most recently Guinea) and thus not only is mine OHS regulation immature on the continent, correspondingly the practice of worker selected HSRs on African mines is fledgling. This paper is an early contribution to building empirical evidence in support of the

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workplace HSR (referred to in this paper as HSR) in Africa. It explores the perceptions of HSRs (n = 25) of their preparation and role, on four South African mines. It then examines the context within which HSR function and the manner in which they are exposed to OHS transgressions and the consequence and penalties thereafter. This is mapped against a framework to understand the trend within OHS regulatory arrangements towards *'responsibilisation'* (Gray, 2009; Walters and Wadsworth, 2017).

1.1. Global OHS regulation and HSRs

The South African Mine Health and Safety Act (MHSA) No 29 of 1996 as amended (Republic of South Africa, 1996) is framed by self-regulation, fashioned in the UK in the early 1970s (Robens, 1972) and is compliant with the provisions of C176. The arrangements under the Act for worker participation in OHS, including the appointment of worker elected HSRs, and a joint employer/employee mine OHS committee, are found in other mining and industrialised contexts including Australia, Canada, New Zealand, the UK and Europe. These participatory arrangements are well established elsewhere, and it is widely accepted that HSRs contribute positively to OHS outcomes (Walters and Nichols, 2007; Walters et al., 2016a; Nichols et al., 2007). However the specific form this participation takes varies across different contexts. ILO C176 states that worker representatives should represent workers on all aspects of OHS, participate in inspections and investigations, have recourse to advisors and independent experts, consult with the employer on policy and procedure, consult with the regulator and receive notices of accidents and dangerous occurrences. All of which, is to be exercised without discrimination or retaliation (ILO, 1995). Worldwide on a day-to-day level, workplace HSRs activities are predominantly found to be operational rather than strategic (Garcia et al., 2007; Harris et al., 2012; Menéndez et al., 2014; Gaines and Biggins, 1992). Accordingly, HSRs rarely participate in the setting of OHS standards and procedures. An early South African study (Mine Health and Safety Council, 2007) concerned with the elimination of silicosis on gold mines found HSRs almost universally unappreciated their advocacy or pro-active role, despite being able to make *"recommendations"* to the employer (Section 30) under the MHSA. The operational activities of HSRs in an industrial workplace are well described in a New Zealand study by Harris et al. (2012) who adapted a framework, first used to describe the activities of OHS practitioners (Brun and Loiselle, 2002) to categorise these into three types; operational organisational, operational technical and operational human. Operational activities of HSRs in this instance (Refer to Table 1) included providing information and advice to workers, the administration of OHS procedure, monitoring of the workplace, improving the attitude of workers to OHS and finding workplace solutions to control measures and production targets.

Evidence built over decades of research about worker representation is that there are a set of preconditions necessary for effective worker representation and consultation in OHS that involve all the tripartiate role-players (employer, regulator and organised labour) and that HSRs should be well trained (Walters and Nichols, 2007). These preconditions manifest more, or less strongly, in different contexts, but combinations of these preconditions, are found to be necessary to underpin HSRs making a significant contribution to improved arrangements and performance for OHS. The pre-conditions are;

- A legislative steer
- Demonstrable senior management commitment to OHS and a participative approach and sufficient capacity to adopt and support participative OHS management
- Competent management of hazard/risk evaluation and control by both managers and representatives
- Autonomous worker representation at the workplace and external trade union support leading to informed and well-trained workers representatives
- Consultation and communication between worker representatives and their constituencies.

Although at the time, Robens (Robens, 1972) in his fashioning of self-regulation, argued there was a *"natural identity of interest"* between the employer and the employee with respect to OHS, this is repeatedly called into question. Primarily this is because OHS is a product of the underlying politics of production, specifically the pressure for production, to which the employer and employee cannot respond equally (Nichols and Armstrong, 1973). As a consequence, participatory arrangements between the employer and employee for OHS remain contentious. One OHS trend that has emerged under the more recent neoliberal discourse of partnership between the employer and employees is framed as *'responsibilisation'* (Gray, 2009; Walters and Wadsworth, 2017). Under '*responsibilisation*,' workers are considered as both potential victims, and as offenders of OHS violations. Although, *'responsibilisation'* speaks to an escalation in the likelihood of individual workers being held responsible for OHS violations. In Ontario, Canada, '*responsibilisation'* found legal expression in a system of OHS ticketing where on-site penalties issued by inspectors for OHS violations were found to be unduly biased towards workers, rather than the employer as the primary OHS offender (Gray, 2009). However '*responsibilisation'* is a continuum which does not only have to find expression in legal tickets. Increased disciplinary action against individual workers, or escalating fear amongst workers of being held accountable for OHS violations or transgressions, are also expressions of a rise in '*responsibilisation*' which serve to deflect responsibility for OHS violations away from the employer. It is this context I term *'creeping responsibilisation,'* as it is not measured in the hard penalties issued against workers described in the Ontario case study of '*responsibilisation'*, but is an insidious expression of this.

1.2. HSRs in South Africa

South Africa is a complex environment, formally considered an upper middle income country, but burdened with one of the highest

Table 1
The activity profile of HSRs at an operational level using an adapted framework first devised for OHS practitioners.

	Organisational	Technical	Human
Operational (Brun and Loiselle) (Brun and Loiselle, 2002**)**	Ensure OHS procedure & policy applied	Research ways of resolving OHS issues	Train workers in safe work methods.
	Investigate accidents	Conduct risk analyses	Discuss OHS issues with workers
Activity Profile HSR (Harris et al. New Zealand) (Harris et al., 2012**)**	Administration of procedure-completion of paper work and reporting to support implementation of the OHS management system	Monitoring the workplace	Information and advice to workers
		Support/provide solutions to control measures and production targets	Improving the attitude of workers
			Monitoring worker compliance

Gini co-efficients in the world (Anand et al., 2017). It is also home to the world's deepest mines and the majority of mineworkers work underground in gold or platinum mines in production teams of between 6 and 12 workers. Despite the gold sector being faced with continued decline over the last 20 years, there are still 455,109 mineworkers employed in the sector (Chamber of Mines of South Africa, 2017). As in other mining contexts worldwide, contract labour has become more common place (Forrest, 2015). There have been hard won improvements in the remuneration of mineworkers, but production targets remain partially incentivised through bonus payments, including in some cases, bonus payments for safety performance (Chinguno, 2015). These payments remain important and most mineworkers live and come from very poor communities (Chaskalson, 2016).

Representative arrangements for worker participation under the MHSA require that every mine with 20 or more employees must have an HSR elected by workers (Section 29 (1) for each shift at each designated working place at the mine (Section 25(1)). No HSR is responsible for more than 100 employees or 50 employees if the designated working place includes separate working places (Section 27(2)). The only qualifications placed on the workplace HSR is that he/she be employed in a full-time capacity in the designated working place and is acquainted with the conditions and activities (Section 28). The number of representatives and the designation of workplaces are agreed in the mine health and safety (H&S) collective agreement signed with recognised trade unions. A workplace HSR is not relieved from the duties associated with his or her full time job. Because of this, and for other reasons, such as absenteeism, an alternative HSR is most often elected at each designated worksite too. On a large mine with thousands of employees, effectively hundreds of workplace HSRs and their alternatives are appointed at any one time. Section 26 of the Act also makes provision for the appointment of a full-time HSR subject to an election. A full-time HSR relinquishes his or her original post for the period of appointment as a full-time HSR. Full-time HSRs may exercise their powers and functions in all parts of the mine for which they are appointed. On large platinum and gold mines between 2 and 4 full-time HSRs may be appointed per shaft. Although the full-time HSR is not the focus of this paper, they are introduced here because they are referenced by workplace HSRs in the findings.

All representatives are entitled to training without loss of pay (Section 30(6)). In South Africa, the Mining Qualifications Authority (MQA) accredits training for HSRs on mines. There are three accredited courses each requiring 5 days face-to-face training, which should be undertaken by an HSR on appointment (Mining Qualifications Authority, 2015). Only one of the courses addresses the functions of the HSR. The other two courses are focused on hazard identification and an introduction to OHS. An early initiative of the MQA to provide training collapsed in 2010, and today the employer delivers HSR training, either through the on-site mine training department, or through an appointed external training provider. In either case, both will be accredited as training providers by the MQA.

Since the promulgation of the MHSA, OHS performance in the mining sector has appeared to improve dramatically. One explanation offered by Hermanus (Hermanus et al., 2018) for this is that the reduction in fatalities, silicosis and NIHL can all be matched to the dramatic decline in employee numbers in South Africa's gold industry. The Chamber of Mines South Africa (COMSA) and the Department of Mineral Resources (DMR) Mine Health and Safety Inspectorate (MHSI) however, do not make this association between the fall in employee numbers and improved OHS performance. They propose that tightened regulation and improved OHS standards are the reasons behind an 87% reduction in fatalities over the period 1993–2015, with 73 fatalities recorded in 2016 (Phakathi, 2016). Presently the formal South African mining sector performs on a par with other benchmark mining nations, such as Canada and the USA. Gold is still the commodity responsible for the greatest number of deaths. The major causes of fatalities are falls of ground and accidents related to transportation (Chamber of Mines South Africa, 2017). Although the sector has struggled to report reliably on occupational disease, the most recent reports indicate improvements in relation to silicosis and NIHL (Department of Mineral Resources, 2017). In the last 20 years, the mining sector has carried an extremely high burden of communicable disease, specifically HIV and TB. A recent review of secondary epidemiological data found that both TB and HIV are higher in mining areas than in the general population (PHRU, 2017). Other studies in South Africa have found that mineworkers carry a heavy burden of non-communicable disease and psycho-social stress (Balfour-Kaipa, 2016). Many mineworkers are stressed about money and are heavily indebted (James and Rajak, 2014).

There are three sections under the MHSA that have a bearing on the participation of workers and their representatives in OHS; Sections 22, 23 and 30. Section 22 describes the individual responsibility of a worker to act responsibly to protect his or her OHS, and to abstain from wilfully endangering the OHS of others. HSRs do not have a specific role or function in relation to Section 22, other than that bestowed on them by virtue of being an employee (including a contract worker in this instance). Section 22 requires every worker (including HSRs) *"to take reasonable care to protect their own health and safety"* and that of any other persons who *"may be affected by any act or omission of that employee."* It also requires that employees take "*proper care"* of protective clothing and any other safety facilities and equipment, "*comply with prescribed health and safety measures"* and procedure and in the event of any situation that presents a risk to his or her OHS or any other person, with which he or she is unable to properly deal, then report promptly to the immediate supervisor. Sections 23 and 30 are directly relevant to HSRs (Refer to Table 2). Section 23 (a) grants the individual mineworker the right to leave a dangerous workplace (RLDW), but Section 23 (b) instructs an HSR to direct an employee/s to leave a workplace which appears to the HSR to pose a serious danger to OHS. Section 30 determines the role and functions of the HSR. The overall thrust is firstly, *'representation'* and/or *'recommendation'* to the employer on any matter related to OHS that is affecting employees and secondly, to contribute to the identification of potential hazards and risks to OHS, and to support the inspection of the workplace. Thirdly, to investigate co-worker complaints regarding OHS.

Section 22 with its focus on the individual responsibilities of workers at first glance speaks to *'responsibilisation'* cautioning individual workers as both potential victims and offenders of OHS violations. Given their direct exposure to potentially unsafe conditions, individual responsibility for risk falls heavily on workers, and under Section 22 workers are impressed to take "*reasonable care"* to protect their own OHS and that of other persons. Thus the onus is on individual workers to act within a framework of individual employee rights and responsibilities, described by Gray in his paper elaborating *'responsibilisation'* as a *'rights defined identity'* (Gray, 2009). Primarily this requires individual workers to ask questions, raise or report concerns to supervisors and exercise OHS rights, such as the RLDW. In doing this, it is assumed an individual worker can affect change by speaking up and/or removing him or herself from a dangerous workplace. Thus a worker can in theory exercise control over his/her OHS, which is in marked contrast to the *'victim-blaming'* that was commonplace prior to the introduction of the MHSA. During South Africa's racialized and discriminatory past, the black mineworker majority were commonly blamed for accidents in the absence of remedial mechanisms for either individual or collective action by workers (Stewart and Nite, 2017).

However acting within a *'rights defined identity'* is shaped by the individual rights discourse rather than the collective right to worker representation associated with the OHS role of organised labour. The rise of individual employee rights and employment protection, and the demise of collectivism and union solidarity as the anchor for labour justice related to OHS is well documented by Hilgert in his critique of global norms with respect to the right to refuse dangerous work and/or RLDW (Hilgert, 2013). Existing evidence is that South African mineworkers have limited success to act within a *'rights defined identity'* and

Table 2
MHSA No 29 of 1996 as amended, Section 30 Rights and powers of HSRs and Section 23 the Right to Leave a Dangerous Workplace.

Section of the MHSA Chapter 3:	Description
Section 30	Rights and powers of representatives: • Represent employees on all aspects of health and safety • Direct any employee to leave any working place if circumstances arise at the working place • Identify potential hazards and risks to health and safety • Make representation or recommendation to the employer or to a health and safety committee on any matter affecting the health and safety of employees • Inspect any relevant document which must be kept in terms of the MHSA • Request relevant information from an inspector • With the approval of the employer, be assisted by or consult an adviser or technical expert • Attend any meeting of a health and safety committee • Request an inspector to conduct an investigation • Participate in consultations on health and safety with the employer or an inspector • Participate in any health and safety inspection and in any internal health and safety audit • Inspect working places with regard to health and safety • Investigate complaints by any employee relating to health and safety • Examine the causes of accidents in collaboration with the employer • Visit the site of an accident • Co-operate with the employer in the conducting of investigations and participate in inquiries • Perform functions agreed by the health and safety committee; or prescribed. NB. The rights and powers apply to health and safety representatives only in respect of the working places for which they are responsible
Section 30(6)	Health and safety representatives are entitled to perform their functions and to receive training during ordinary working hours
Section 30(7)	Any time reasonably spent by a health and safety representative for a purpose in (Walters and Wadsworth, 2017) must be considered for all purposes to be time spent carrying out the employment duties of that representative
Section 23	The employee has the right to leave any working place whenever - (a) circumstances arise at that working place which, with reasonable justification, appear to that employee to pose a serious danger to the health or safety of that employee; or (b) the health and safety representative responsible for that working place directs that employee to leave that working place.

that the collective voice of worker elected HSRs is repressed. Coulson et al. (2018) found that resistance to an unsafe workplace was often expressed informally, rather than formally. Workers stated that although they were likely to approach an HSR in the event of exercising the RLDW, HSRs were unable to escalate issues beyond the immediate workplace. As a consequence workers resorted to informal resistance to an unsafe workplace, involving confrontation with supervisors and/or other production team members that would resolve either through the coercion and/or capitulation of workers back into the workplace.

This paper explores the perceptions of HSRs (n = 25) at four mine sites in South Africa about their preparation and understanding of their role and their day to day activities. It sets out to provide evidence of *'a creeping responsibilisation'* on South African mines that results in worker elected HSRs feeling anxious about their accountability for OHS transgressions and in some instances, facing employer actions against them. Both of which serve to deflect responsibility for transgressions away from the employer.

2. Materials and methods

A qualitative study was conducted at four mine sites between February 2015 and February 2016 to explore the preparation and practice of workplace HSRs. The mine sites (classified using the profile developed by the International Council on Mining and Metals (ICMM) (Mining's contribution to sustainable development, an overview ICMM - 3716 Internet, 2012) included two global senior mining companies asset base US$ 3 Billion and above and, two intermediate mining companies asset base US$ 1–3 Billion) were underground operations with > 500 employees workers on site including gold (1 mine), platinum (2 mines) and diamond (1 mine). Workplace HSR were purposively sampled. With the exception of one site HSRs were selected with both ≤18 months experience in the role and ≥18 months experience in the role. The safety department at each site facilitated access to HSRs. On the first visit HSRs (n = 4) and in one case HSRs (n = 5) were recruited for the study at each site. After the first visit HSRs (n = 4) recruited for the study had been retrenched and HSR (n = 1) had resigned from the role, facilitating the recruitment of another HSRs (n = 8). In total, workplace HSRs (n = 25 (gold (n = 6), platinum (n = 14) and diamond (n = 5)) participated in the study of whom (n = 12) were interviewed twice mostly within a 4 month period. Other HSR were not available on the day of the second research visit, or had been retrenched, or resigned from the role. Thus in-depth semi-structured interviews (n = 37) were conducted in total (refer to Table 3). Of the total sample, HSRs (64%) worked underground and HSRs (60%) reported ≥18 months experience in the role, although this experience was not necessarily limited to the research site only. HSR who worked on surface included those working in workshops, training facilities and administration blocks.

The in-depth semi-structured interviews (n = 37) of 60 min or more in length explored HSRs perceptions of their:

- Preparation for the role
- Understanding of the role in relation to the statute, and
- Day-to-day activities with a specific exploration of the day before the interview
- Challenges commonplace in the execution of their daily activities.

Short monthly telephone interviews (n = 53) with HSRs were used by researchers to build a relationship with HSRs and to check for any significant developments, especially at the first two sites where interviews were conducted. All in-depth interviews were conducted in English and in local indigenous languages by a trained qualitative researcher. Interviews were translated and transcribed. Ethics clearance was provided by the Human Research Ethics Committee (HREC)-Medical, University of Witwatersrand, Clearance Certificate No. M140701. Participation in the study was voluntary and with informed consent. Transcribed data was thematically analysed using Max QDA 12 using deductive and inductive codes. Two experienced qualitative researchers met to determine inter-rated reliability and to check for consensus and consistency.

The study sites included global senior and intermediate mine operations with > 500 employees on site. Therefore the findings may not

Table 3
Data collection at 4 mine sites with respect to HSR.

Site	Site 1 Gold	Site 2 Platinum	Site 3 Diamond	Site 4 Platinum	Totals
Start date	Feb-15	Jun-15	Mar-15	Jul-15	
End date	Oct-15	Feb-16	July-15	Oct-15	
# HSRs recruited at first visit	4	4	5	4	17
# HSRs recruited at subsequent site visits	2	6	0	0	8
# HSRs recruited in total	**6**	**10**	**5**	**4**	**25**
# HSRs resigned	1	0	0	0	1
# HSRs retrenched	0	6	0	0	6
# HSRs became FT HSRs	0	0	0	1	1
# HSRs whose situation changed during research	**1**	**6**	**0**	**1**	**8**
# HSRs reps underground	6	5	3	2	16
# HSRs reps surface	0	5	2	2	9
# HSRs ≥ 18 months experience not only restricted to study site	2	6	3	4	15
# HSRs with ≤ 18 months experience	4	4	2	0	10
# HSRs interviewed 1×	3	8	0	2	13
# HSRs interviewed 2×	3	2	5	2	12
Total # interviews with HSRs	**9**	**12**	**10**	**6**	**37**
# phone calls to HSRs between March-December 2015	20	6	23	4	53

resonate with small scale or junior producers where the role of HSRs may take an alternative form.

3. Results

In interviews with HSRs it was apparent that HSRs expressed an astonishing degree of personal responsibility or accountability for OHS incidents. These were not incidents committed by themselves, they were incidents committed by the co-workers they represented. This was coupled with the sense that the employer *'seeks out'* or *'comes for'* the HSR in the event of an OHS incident. In more extreme cases, the HSRs described employer action been taken against them, either by being moved out of the immediate workplace and, as in one case, being suspended from work. These findings spoke to *'creeping responsibilisation.'* Either because HSRs were taking on the role of the guilty partner in the event of wrong doing, by feeling personally responsible for the OHS error of other workers, or by being the foil for the employer against a backdrop of OHS transgressions. The sum total of which meant that employer responsibility was deflected. This was the insidious *'creeping responsibilisation'* rather than *'responsibilisation'* because there were no consistent hard measures taken against HSR, just pervasive descriptions by HSRs of their own experience of holding responsibility and facing penalties against a backdrop of OHS transgressions.

My analysis of the findings led me to develop a framework (refer to Fig. 1) to reflect on the commentary of HSRs with respect to *'creeping responsibilisation.'* The four domain framework aimed to weave together the evidence given by HSRs as to how *'responsibilisation'* emerged. The first domain considered the preparation of HSRs and their referencing of the law and specifically the MHSA; the second, their day-to-day activities and whether these aligned with the activities of HSRs elsewhere in the world; the third, how the context within which HSRs functioned left them exposed to OHS transgressions that they were unable to address or take action against; and the fourth, the expression of *'creeping responsibilisation'* through the consequence and penalties faced by HSRs both at a personal level and in employer actions taken against them. The findings are organised under the heading of each domain of the framework. The perceptions of HSRS are illustrated by quotations taken from the qualitative data.

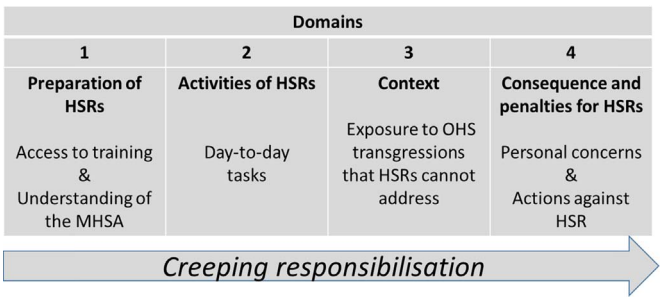


Fig. 1. A four domain framework for understanding HSR experience of *creeping responsibilisation*.

3.1. Domain 1: The preparation of HSRs

All HSR reported being selected by co-workers. Table 4 summarises the demographic background of HSRs (n = 25). The majority were

Table 4
Demographic and other background information about HSRs.

Variable	Category	#	%
Selected by co-workers		25	100
Age in years	21–30	6	24
	31–40	11	44
	41–50	7	28
	51 +	1	4
Sex	Male	23	92
	Female	2	8
Home language	isiZulu	1	4
	Setswana	7	28
	isiXhosa	3	12
	TshiVenda	4	16
	Sesotho	6	24
	Sesotho sa Leboa	1	4
	SiSwati	1	4
	Afrikaans	1	4
	English	1	4
Years holding present job	< 1	4	16
	1–2	6	24
	3–5	10	40
	6–10	4	16
	Unknown	1	4
Schooling	Completed primary school	2	8
	Some high school	8	32
	Completed matric	7	28
	Tertiary education	7	28
	Unknown	1	4
Terms served as a workplace HSR	One	16	64
	Two	5	20
	Three plus	2	8
Membership of a trade union	Yes	21	84
	No	4	16
# Workers representing in the workplace	< 50	23	92
	50–100	2	8

male (92%), above 30 years of age (78%), with more than 3 years of experience (56%) of their present job. Most had been to high school (88%) and reported having completed grade 12 or above (56%). The considerable length of time in their present job and that almost all HSRs had been to high school suggested that the sample were very likely to be "*familiar with the hazards and procedures of the mine workplace,*" (Section 28) which is the only requirement placed on the appointment of a HSR under the MHSA. Thus the sample was compliant with the Act. Trade union membership was (84%) and almost all HSRs (92%) reported representing less than 50 workers. Of the sample (64%) were serving their first term as an HSR.

The findings showed that HSRs relied heavily on training to understand their role but the experience of this was not uniform. There was evidence that some HSRs had attended some/all of the sector wide, accredited 15 day representative skills programme (Mining Qualifications Authority, 2015). Other HSRs reported having attended no training, or training for three days only. Representatives stated they were trained at the mine training department, or by an external service provider working on contract for the employer. Only one HSR reported the involvement of organised labour in training that had happened ten years ago. Training was in some instances complemented by other on the job activities, such as watching other HSRs perform their duties, and informal mentoring provided by the full-time HSRs, or from supervisors and safety officers. HSRs reported that attending meetings also provided some guidance about their role. Despite the gaps and inconsistencies in their preparation, HSRs referenced their role back to the MHSA, but did not reference section 30 (the rights and powers of HSR). Rather HSRs referenced sections 22 (individual worker OHS responsibility) and 23 (RLDW).

> *"They trained me about how to do risk assessment and they trained us about section 23, if the place is dangerous I have the right to refuse. And other thing is section 22, they trained us at work we need to take care of each other." (HSR underground platinum mineworker age 43)*

> *"Sometimes you find out that the crew want to blast but in a sub-standard way whereas as a health and safety rep I have to apply section 22 and 23 which is the Mine Health and Safety Act." (HSR underground platinum mineworker age 35)*

3.2. Domain 2: Activities of HSRs

Across all four sites, HSRs described four areas of operational level activity. As found elsewhere, workplace HSR did not describe influencing OHS policy and standards or making effective representation upwards to the mine OHS committee, and therefore their activities were categorized as operational and categorised as follows:

i. Risk assessment for safe production: Completing risk assessments (often mini risk assessments) such as *'early examination making safe'* to support safe production;
ii. Administration and reporting: The completion of forms (such as signing off on early examination making safe) incident reports and stop notes that are relayed either to supervisors and/or production management, the safety department, and/or to the full-time HSR and, the attendance of shaft or shift OHS meetings;
iii. Worker education, communication and compliance: Conducting worker education, and/or communicating with workers about OHS to ensure compliance with procedure, and with the wearing of PPE;
iv. Support to worker health and wellbeing: Such as seeing to workers who are sick at work and/or listening and advising on the personal or emotional problems of workers.

These activities map well against the framework used by Harris et al. (2012) to categorise the activities of HSRs in New Zealand (refer to Table 5). The exception to this is the support to worker health and

Table 5
The activity profile of HSR at an operational level in New Zealand and South Africa.

	Organisational	Technical	Human
Operational (Brun and Loiselle, 2002)	Ensure OHS procedure & policy applied Investigate accidents	Research ways of resolving OHS issues Conduct risk analyses	Train workers in safe work methods. Discuss OHS issues with workers
Activity Profile HSR (Harris et al. New Zealand) (Harris et al., 2012)	Administration of procedure- completion of paper work and reporting to support implementation of the OHS management system	Monitoring the workplace Support/provide solutions to control measures and production targets	Information and advice to workers Improving the attitude of workers Monitoring worker compliance
Activity Profile HSR (this study)	The completion of forms (such as the sign off early examination making safe) incident reports and stop notes that are relayed either to supervisors and/or production management, the safety department, and/or to full-time HSR and, the attendance shaft or shift OHS meetings	Completing risk assessments (often mini risk assessments) such as 'early examination making safe' to support safe production	Conducting worker education, and/or communicating with workers about OHS to ensure compliance with procedure, and with the wearing of PPE Support to worker health and wellbeing, such as seeing to workers who are sick at work and/or listening and advising on the personal or emotional problems of workers

wellbeing which was not described in the New Zealand study, but is captured on Table 4 as a second grouping under the category *'operational human.'* The introduction of the MHSA and worker elected HSRs coincided with the rapid escalation of the HIV epidemic in South Africa. In the late 1990s, the mining sector was considered the epicentre of the HIV epidemic, and treatment was not yet available (Campbell and Williams, 1999). Given this, it is fair to assume, that worker elected HSRs would have faced significant levels of ill health in the workplace amongst co-workers, and themselves, providing the context for their support role to worker health and wellness. HSRs described how depending on their specific workplace (for example, underground stope or conveyor belt maintenance, or on surface workshop), and/or their educational background, and/or personal attributes, different activities got emphasized, suggesting that there is variation in the exact role taken by individual HSRs. For example, HSRs reported being technically experienced, and able to identify workplace hazards, or literate, and able to assist supervisors with paper work and/or being effective in their communication. In general, HSRs placed emphasis on their education and communication activities.

> *"My role is to inform my fellow workers, of their right to health and safety and to advise them on what to do in risky situations, the decision still lies to them to do what they want to do, and it is my job to educate them." (HSR surface diamond mineworker age 26)*

3.3. Domain 3: The context of HSR activity and exposure to OHS transgressions

The context for HSR activity was complex. This was because HSRs were regularly exposed to OHS transgressions and described being unable to change this. The primary narrative of HSRs was being caught in the nexus between production pressure and working safely, and the consequences thereof, which then left them vulnerable and unwittingly complicit in OHS transgressions. Secondly, HSRs described aspects of their role that in some instances, meant they too committed OHS transgressions. And thirdly, in reference to the two earlier points, HSRs described having OHS knowledge and experience but, being unable to act with reference to this, to bring about change in their context.

3.3.1. Production pressure and OHS transgressions

HSRs described employer transgressions and informal worker short cuts that compromised the integrity of the HSR role, as supervisors and/or co-workers chased production targets. In South Africa, the pervasiveness of production pressure and the localised expression of informal working especially on gold mines to avoid production blockages by working outside mine standards, is known as *'planisa'* (to make a plan or improvise) and is well documented (Phakathi, 2012). Whereby worker teams improvise to overcome a number of systemic and commonplace production blockages to meet targets in pursuit of bonus payments often with the support of supervisors, who themselves are under pressure.

HSRs described the pressure to meet production targets taking many forms, including the reorganization of the production team across day and night shifts to maximize outputs that resulted in individuals being pushed to perform *"miracles" (HSR underground gold mineworker age 45)* and the flouting of safety standards, such as those for workplace support. HSRs also described incidents where workers were unqualified to perform certain tasks. Mostly HSRs described supervisor pressure to do the wrong thing, but it was also co-workers who took short cuts. In both instances HSRs described these as the *"difficulties"* they faced.

> *"The supervisor forced us to load without a proper cage. As a safety rep I have to tell him no we can't load it without a cage, as it is the law. The supervisor forced us to load them without a cage. So, those are the difficulties I have experienced." (HSR surface platinum mineworker age 32)*

> *"Sometimes when there's no [support] material the people that I'm working with end up working the wrong way trying by all means to put things together. That is the difficult situation." (HSR underground platinum mineworker age 35)*

Similarly incentivized safety targets also had limitations and encouraged OHS incidents to be hidden.

> *"We end up hiding incidents underground because of the incentive. We know if you go and report the incident then it means no bonuses for the team." (HSR underground gold mineworker age 41)*

HSRs presented pressure as pervasive in the workplace and described discussions with co-workers that sought to identify strategies to "*avoid the management being behind our backs the whole time." (HSR underground diamond mineworker age 24)* or to *"ease" (HSR underground gold mineworker age 41)* the work pressure issue.

3.3.2. The perceived role of HSRs and OHS transgressions

Although the role described by South African HSRs mapped well against the Harris framework, HSRs described incidents where their own HSR activities left them exposed to and/or committing an OHS transgression. In all such instances, HSRs did not question how they had been placed in such an invidious position. An example of this, was the HSR who described himself as responsible for the provision of dust masks to co-workers, when they were working at the crusher. On the day he was unable to collect masks from the storeroom, he encouraged co-workers to improvise with cloths.

> *"I make sure that I go and collect them [dust masks] every chance I get. I had a problem on Monday where we didn't have them at the crusher, we have to find a way to cover ourselves from the dust. We found cloths and covered ourselves with them." (HSR underground gold mineworker age 22)*

In another case, the HSR took on the completion of the employer safety, health and environment (SHE) file. Having agreed to this, he then described his shortcomings that were picked up, on inspection of the file.

> *"The other day one of the safety people, …came to fetch our safety files. ….she went through the files thoroughly, she made very descriptive notes about the things that are wrong. One of the things that came up was that every six months we have an attendant appointment that has to be signed off by all belt attendants. It is my responsibility to do it because I took on the SHE files. I forgot to do them they were supposed to be done in January and I only did them this month February. It is things like that that you forget to do." (HSR surface diamond mineworker age 26)*

The exception to the Harris framework for HSR activity was the support provided by South African HSRs to worker health and wellness. When workers arrived sick or emotionally distressed, HSRs described contributing to decision making that resulted in absenteeism and the reorganisation of workloads. By allocating the distressed worker lighter tasks, or advising the individual to take sick leave, the HSR inevitably escalated pressure and/or increased the workload for co-workers. In a hazardous underground workplace with incentivized production targets this could have marked OHS consequence.

> *"Yeh if a person is not so good, he is also no good to work because you might have stress and your mind is not at that thing that you are doing so you might get injured … so we encourage the person to sit down and not work fully for that day." (HSR underground gold mineworker age 22)*

3.3.3. HSRs have knowledge but are unable to bring about change

HSRs spoke from a position of OHS knowledge gained either through training or/and experience. This meant in some instances HSRs were equipped to challenge common informal practices outside mine standards used to break production blockages, such as, looking for equipment in old workplaces in the event of equipment delays

(Phakathi, 2018).

"That is why they sent us to the Training Centre whereby we are trained as the safety reps. Safety clearly states that underground we don't have to go to the old workplaces and look for equipment. We have to have to equipment available so that we can perform." (HSR underground gold mineworker age 45)

However in many instances it appeared that HSRs were unable to utilize this. HSRs pointed to the contradiction of holding OHS knowledge, but this not taking precedence in the workplace. HSRs reported they were not listened to, and that they were unable to get their concerns taken seriously in shift or shaft level meetings, or through direct engagement with supervisors and/or management.

"The ones [workers] *that are affected by the dust and the cold…When they tell us they expect us* [HSRs] *to take the matter to the superiors. When we take it to the superiors we expect to see results, of which we don't see. We attend meetings every month. The things that we talk about are the issues that were spoken about since the first time I became a safety rep, and it's been two years since I have been here." (HSR underground diamond mineworker age 34)*

"Most of the time no one takes us seriously, for example maybe if you tell someone that we cannot work there because the area has no water and it has fumes. They will tell you that can't you see that the area is ok. We do talk and express our views but one listens." (HSR underground gold mineworker age 24)

"The pressure we felt, was from the supervisor. He wanted what he wanted. Yet our plan was to support and blast the next day. We know what we are talking about because we have worked at this place longer than him." (HSR underground gold mineworker age 41)

3.4. Domain 4: Consequence and penalties faced by HSRs

The sum total of their inadequate preparation, the activities undertaken by HSRs and working within a context that left HSRs routinely exposed to OHS transgressions resulted in HSRs facing personal consequence. Primarily, this was felt through their own expression of personal responsibility, but also experienced because of their vulnerability to direct action being taken against them. In interviews with HSRs it was apparent that HSRs expressed an astonishing degree of personal responsibility, or accountability for OHS incidents committed by co-workers they represented. This coupled with the sense that the employer '*seeks out*' or '*comes for*' the HSR in the event of an OHS incident. In more extreme cases the HSRs described employer action been taken against them, either by being moved out of the immediate workplace, and in one case being suspended.

3.4.1. HSRs feel accountable for OHS transgressions

HSRs reported that the reality of effectively having *"two jobs"* (the job of employment and the role of a workplace HSR) made it impossible to always know what was happening in the workplace, and that safety incidents happen when your back is turned, and about which you will have to explain or account.

"Sometimes I think it's too much for a person to do his job and be on a lookout for other people. Sometimes I would be working and not notice an incident that is happening behind me and then I will be held accountable for the incident." (HSR underground gold mineworker age 22)

Being an HSR was described as *"risky"* or requiring one to be *"on guard all the time" (HSR underground gold mineworker age 22)* and that administrative paper work should be meticulous so that you are protected from blame. The force of these descriptions is significant, and the individual HSRs accentuated these points by emphasizing their underlying fear of either losing his/her job, or by stating that workers did not want to be HSRs.

"Being a safety rep is risky. Once someone gets injured they [employer] *want the safety rep. People don't want to be safety reps." (HSR underground gold mineworker age 36)*

"You must be careful. Number one, make sure that everything you do must be in black and white. If they ask you why did this thing happen? You must be able to answer that. Everything must be jotted down- …. If you do not do that tomorrow you might be in trouble, you might find yourself going to jail. You can lose your job. As a health and safety rep, if someone dies you must be able to answer." (HSR surface platinum mineworker age 44)

Even in instances where the HSR had brought an OHS transgression to the attention of the supervisor the fear of this becoming a problem for the individual HSR did not dissipate, as described below in the case of an untrained lift operator. Audits of the workplace were also described by an HSR as *'stressful'* because they were regarded as a measure of the performance of both the workplace supervisor and the HSR and a check of, *"whether you have done your job properly." (HSR surface diamond mineworker age 45)*

"The lift operator was not trained to control the lift, I always tell my superiors to take that person to the training. They say they will take him but till today he was not taken to the training and it's been 4 months now doing this job without training and the law does not allow that. If someone is not trained there might be a mistake that could cause a danger and people will be injured, then the person who controls the lift will be needed to produce his certificate to show he was trained to do the job. If he does not have it that could become my problem that's what I'm afraid of." (HSR underground platinum mineworker age 44)

3.4.2. Actions are taken against HSRs

Perhaps the most serious charge that HSRs described were employer actions being taken against them. In the main this appeared to be informal management actions as opposed to formal disciplinary procedures, whereby HSRs were moved out of the immediate workplace to facilitate informal work practices to reach production targets.

"For instance there is a time where people just want to work. But because the safety rep is there, they feel that they have to move him so that they can do one, two, three. If you are there and asking questions, then it's a problem between you and that person, especially the supervisors." (HSR underground diamond mineworker age 34)

However, the application of formal disciplinary actions against HSRs should not be overlooked and it may be worthy of further investigation. In this study, one respondent described being suspended from work for 2 months as a direct result of his role as HSR because of the conflict that had arisen between him/her and with both workers and supervisors.

"The workers do not follow the rules when they work. I told them they must work according to the rules. They said, "Hey you, you are delaying us, you are preventing us from working! You bring the foreign law, because we do not know where you get these rules from". When you are using this thing you must wear gloves. When you are using cement you must wear gloves. I was suspended for 2 months. They said we can see you are big headed, we are removing you from here." (HSR surface platinum mineworker age 44)

4. Discussion

It could be surmised that the overall positive OHS performance of the South African mining sector since the promulgation of the MHSA speaks, in part, to the positive association found between OHS performance and arrangements for worker representation (Walters and Nichols, 2007; Walters et al., 2016a; Nichols et al., 2007). However this

study highlights the limitations to worker representation on South African mines. Fig. 2 summarises the findings with respect to the '*creeping responsibilisation*' that HSRs experienced on South African mines. It illustrates that the culmination of the inadequate preparation for their role (Domain 1), the present manifestation of HSR day-to-day activities (Domain 2) and, the workplace context of regular exposure to OHS transgressions, against which HSRs report being unable to act (Domain 3), left HSRs vulnerable to personal consequence and employer penalties (Domain 4). The study concurs with an earlier study of the implementation of the RLDW that found workers reported that HSRs were unable to escalate issues effectively beyond the immediate workplace (Coulson et al., 2018). The findings raise some alarm about worker representation in OHS, because without change, the role of HSR would be untenable for many workers, who would rather not be burdened with the worry and/or the threat of possible action. Thus, although South Africa has a statutory system of worker representation, '*creeping responsibilisation,*' means representation and individual representatives are vulnerable, which is entirely contrary to the intentions of both the MHSA and ILO C176, which expressly protect representatives from discrimination in this role.

The pre-conditions for worker representation (Walters and Nichols, 2007) rely on both the individual, and collaborative, commitments of the tripartite OHS role-players (employer, regulator and organised labour) and, that HSRs are well trained. First off, the employer needs to demonstrate capacity and willingness to support participative arrangements, and ensure the competent identification and management of hazards; the regulator, sufficient regulatory steer; and organised labour, the capacity to lead an autonomous system of worker representatives, who are well trained. Since the promulgation of the MHSA, the statutory tripartite structures of the Act (the Mine Health and Safety Council (MHSC) and the Mining Qualifications Authority (MQA)) lead sector wide developments for OHS. This has met with success and the sector wide OHS milestones 2003 and 2014 (Msiza, 2013; Mine Health and Safety Council, 2014), the OHS culture transformation framework (Mine Health and Safety Council, 2011) and the training of HSRs are three examples, of interventions emanating from these structures. The exception to this being the employer led sector wide Mine Occupational Safety and Health (MOSH) Leading Practices Adoption System, which only as it rolled out, out of necessity fostered closer ties with the regulator and organised labour (Hermanus et al., 2015). Thus the sector has demonstrated significant joint action and commitment in the 20 years post the MHSA, but as of now, has seemingly been unable to produce the necessary pre-conditions for worker representation that could have protected HSRs from '*creeping responsibilisation.*'

The '*responsibilisation*' thesis of this paper found weaknesses in the preparation of HSRs (refer to Domain 1, Fig. 2). Currently, although training is centrally co-ordinated through the MQA, one obviously difficulty is that the employer has significant opportunity to bias the content of the programme, which disadvantages the collective OHS worker voice of organised labour. HSRs reliance on section 22 (individual OHS responsibilities of workers), rather than section 30 (rights and powers HSRs)(refer to findings in Domain 1) as the underlying mandate for their role speaks to employer interests and bias. This is because Section 22 forefronts the OHS behaviour of workers which is vastly different to Section 30 that equips an HSR to represent employees' interests, with respect to OHS, to the employer. Neither section make an individual worker responsible for the behaviours of other co-workers, but section 22 with its focus on behaviour, is more easily open to manipulation, to back-up employer interests for the behaviour of workers to be policed.

However this is certainly not the only problem with HSR training. Estimates in the sector are that there up to 40,000 HSRs who at any one time should be trained and/or undergoing training. A study commissioned by the MHSC in 2013, is not publicly available, and is the only evaluation of HSR training to date. Nonetheless, one concern, for which

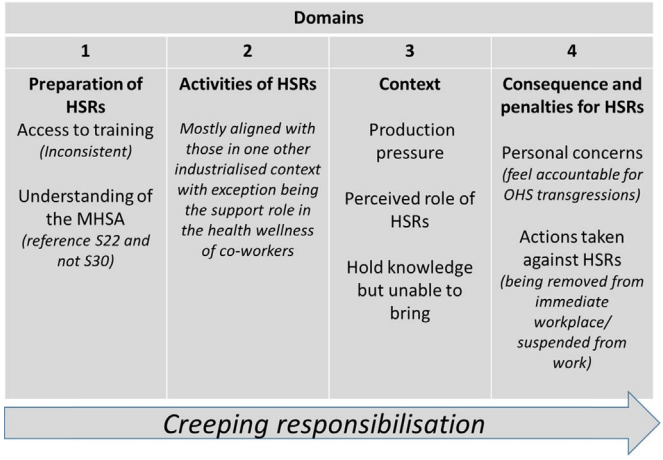


Fig. 2. Evidence for HSR's experience of *'creeping responsibilisation'* on South African mines.

there is some evidence in this study, is that many HSRs do not get sufficient time out of the workplace to complete all three courses, and that very few representatives are fully trained for their role. Conceivably, the design of the training programme over 15 days is unrealistic given the significant numbers of HSRs to be trained. In 2011, to fast track training, targets for HSR training were set by the DMR under the amended Mining Charter.[1] Set as one, of six measures to address OHS, an evaluation of the achievements of the Charter showed only 1.6% of mining rights holders(weighted data) complied with all six OHS measures that included the training of HSRs (Department of Mineral Resources, 2015). A second concern with HSR training is that it has not kept pace with changes in the sector. Training is set at NQF level 2, equivalent to 3 years of South African high school (this is school leaving age 16/Grade 10). The education profile of mineworkers has changed significantly in the last two decades with the entry of millennials into the mine workforce (Phakathi, 2018). In this study, around 40% of the sample reported not having reached this level of schooling, whilst more than 50% reported having exceeded it. The MQA 2017–18 Sector Skills Plan(SSP) concurs and states that 47% of mineworkers have achieved the equivalent of upper high school levels (grades 10–12) (Mining Qualifications Authority, 2016) Only 22% of the sectors' employees have between grades 4–9 of schooling. These figures suggest that the training offered to HSRs should be considerably more diverse to cater for the divergent education experience of mineworkers. It would also suggest that there is the opportunity to introduce a cadre of HSRs to an advanced set of skills.

Another concern is that the OHS content is shaped by the priorities that historically, and today, beset the gold sector. Gold, although not the only offender, is still the worst offender with respect to fatalities, injury, silicosis and noise induced hearing loss (Department of Mineral Resources, 2017). A recent global review for the International Commission on Occupational Health (ICOH) presented an expanded list of contemporary OHS priorities for mining that included accidents, lung diseases, cancers, toxic chemicals, hearing loss, heavy work and musculoskeletal disorders, vibration, heat and cold stress, high altitude and psycho-social risks (Elgstrand et al., 2017a, 2017b). Today, the single largest category of mineworkers in South Africa come not from gold, but the platinum group metals (33.8%) (MQA SSP 2016). Platinum, for example, has witnessed a rapid escalation in contract labour (Forrest, 2015) and has had more success with the introduction of some

[1] The Mining Charter is a regulatory tool used by the DMR to drive transformation and address inequalities in the mining sector. Its primary focus is the promotion of black ownership and to drive the promotion of historically disadvantaged South Africans within the management of the industry. The amended Mining Charter included some OHS commitments.

mechanisation than the gold sector, both of which profoundly shape OHS concerns for today and the future (Vogt and Hattingh, 2018; Gunningham, 2008). The desultory record of training delivery and the obscurity of information about HSR training calls into question the capacity, or willingness, of the sector to prepare representatives, as per the requirements of the MHSA. HSRs are shut out and disadvantaged by this.

If we accept that *'creeping responsibilisation'* is an outcome of the absence of important pre-conditions for worker representation then our attention must turn to the role of tripartite role-players. Of global concern is the emergence of management unitarism (Walters et al., 2016a, 2016b) and that behaviour based management systems have shaped the role of HSRs to do the work of management, described in at least one other study as a shift to *'responsibilisation'*(Walters and Wadsworth, 2017). Critical to autonomous worker representation, management must demonstrate support for the participative approach. In South Africa, existing evidence is that the employer is poorly disposed to an autonomous system of worker representation. An evaluation of the industry led sector-wide MOSH initiative found that MOSH had by-passed structures for worker representatives, despite its rhetoric of worker participation, choosing in preference to facilitate worker participation through the use of survey tools to develop 'mental models'(Hermanus et al., 2015). The regulator also strengthened the hand of the employer, in relation to worker representatives, in its most recent guidance with regard to the RLDW (Department of Mineral Resources, 2016). It institutes a high level dispute mechanism in which a deadlock is brokered through a technical adviser and the employer, and in which, the regulator is absent, leaving workers who challenge and escalate issues with respect to a dangerous workplace, adrift from the essential regulatory steer.

What then has happened to organised labour? The pre-condition for autonomous worker representatives supported by an external union appears poorly established. Despite 84% union membership amongst HSRs (n = 25) in this study, HSRs had a very poor appreciation of the role of the collective worker voice in OHS outcomes. One reason for this is the absence of trade unions in the training of HSRs as already discussed. The collapse of the MQA programme in 2010 saw the employer take a step forward and unions take a step back with respect to HSR training. Only very recently, in 2017, has the National Union of Mineworkers (NUM) re-engaged and is preparing new training materials, against the existing MQA accredited unit standards. Global studies in advanced economies have shown that training, especially training when facilitated through trade unions is important in the preparation of HSRs for their role (Walters and Nichols, 2007; Walters, 1996). This is made more urgent given the rise of employer dominance. In 1988, Zwi et al. writing about OHS regulatory change in South Africa remarked that at the time NUM relied on two full-time employees to co-ordinate labour's OHS response to the apartheid mining regime (Zwi et al., 1988). To a very large extent, the same could be said today. The transition to democracy and the MHSA has not seen investment in the OHS capacity of labour to meet its statutory commitments under the Act. An additional hindrance to labour's capacity to lead, is the absence of guidance in the sector about the role of HSRs, other than the rights and intention described under the legislation. HSRs in this study described undertaking activities that they perceived as their role, that in practice facilitated employer OHS compliance, such as distributing PPE, or completing the OHS file, or facilitating alternative arrangements for sick or emotionally distressed mineworkers (refer to findings in Domain 3). Guidance into the sector about the implementation of the role of HSRs is a gap that organised labour in collaboration with the regulator should have closed years ago. The discrimination, personal stress and punitive action taken against HSRs (described in Domain 4, Fig. 2) is not an accepted face of global worker representation and the South African mining sector should act to address this directly. A contributory factor to this undoubtedly is the OHS culture found on South African mines. Detailed in the MHSC *'Changing Minds, Changing Mines'* report (Changing Minds, 2010), the report was unambiguous and found that blame, persistent racism, and lack of capacity building were a strong feature of the South African mining industry, especially for those at the low end of the hierarchy. The production and safety bonuses found in this study to hamper the actions of HSRs (refer to Domain 3, Fig. 2) were also found to create considerable problems for OHS behaviour. With up to 50% of respondents reporting that production bonuses often caused problems (Changing Minds, 2010). These challenges persist (Coulson et al., 2018; Phakathi, 2018). The MHSC launched the Culture Transformation Framework in 2011 to address OHS culture, but a substantive shift is taking time, as shown in this study. There is also some evidence that more recent changes to the labour regime, towards the increased use of externalised contract labour, coupled with the present enforcement tactic of the regulator, that regularly results in the partial or total halting of mining operations, further contributes to these complexities (Forrest, 2015). Nevertheless, however beguiling a conducive OHS culture may seem, it is not a precondition for worker representation (Walters and Nichols, 2007), although the unacceptable face of discrimination faced by HSRs, could be confronted through the sector's Culture Transformation Framework.

5. Conclusion

The South African experience of worker elected HSRs is pioneering on the continent and therefore may hold lessons for other African states that seek to strengthen their own OHS commitments. However, the results here point to a system of worker representation that is under pressure. Twenty years on from the introduction of worker selected HSRs onto South African mines under the MHSA, the evidence is that HSRs are victim to '*creeping responsibilisation*.' Although the tripartite role-players have successfully come together in the sector to take forward important OHS concerns, this has not resulted in them meeting the pre-conditions for effective worker representation. Instead the hand of the employer in relation to worker representation has been strengthened. Although tripartite role-players may look to organised labour for leadership to change this, the commitment to worker representation needs to be made by all role-players. There are a number of concrete actions that could be taken, of which, resourcing labour to train HSRs is a priority. Guidance should be developed for the sector about the role and activities of HSRs, and the discrimination and intimidation of HSRs experienced as a result of '*creeping responsibilisation*' should be a sector wide concern.

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How worker health and safety representatives are captured and outdone by production on South African mines

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Abstract

In South Africa, post-apartheid, under the Mine Health and Safety Act No. 29 of 1996, workers elect health and safety representatives (HSRs). Descriptive case studies were conducted at four underground mine sites (gold, platinum and diamond) to explore the relationship between employer safety management and HSRs. A systems approach (socio-autopoiesis) is used as a metaphor for the circular/closed communication that ensured HSRs were dominated by employer interests and let down by the regulator. The stance of the employer to worker representation has not significantly changed since the managerial self-regulation prevalent in the demise of apartheid years. Given union membership is high, the capacity of HSRs to act without reference to management is uniquely compromised and presents as an anomaly in studies of worker representatives worldwide.

Keywords

Occupational health and safety, regulation, worker representatives

Introduction

One of the objectives of the South African Mine Health and Safety Act (MHSA) No. 29 of 1996 as amended (Republic of South Africa, 1996) is the participation of workers in their own occupational health and safety (OHS) through the appointment of worker

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selected/elected health and safety representatives (HSRs). Under Chapter 3 of the MHSA, the appointment of these representatives is subject to the outcomes of a negotiated health and safety collective agreement agreed with recognized trade unions at a mine site. Estimates are that 80% of the approximately 450,000 employees in the mining sector are unionized (Bhorat et al., 2014: 5). On large mines the arrangements for HSRs will be negotiated primarily with one of the two dominant trade unions, the National Union of Mineworkers (NUM) and the Association of Mineworker and Construction Union (AMCU).

A 2008 sector wide audit of the arrangements for HSRs in South Africa reported two thirds compliance amongst mines (Department of Minerals and Energy, 2008). Globally arrangements for HSRs are well established and are associated with positive OHS outcomes (Nichols et al., 2007; Walters and Nichols, 2007; Walters et al., 2016). In South Africa, since the promulgation of the MHSA post-apartheid, there have been dramatic improvements in mine safety with an 87% reduction in fatalities over the period 1993–2015 (Phakathi, 2016: 5). Mine fatalities were at a record low in 2016 (Department of Mineral Resources, 2017) and the formal South African mining sector is shown by industry to perform on a par with other benchmark mining nations, such as Canada and the USA (Phakathi, 2016). Hermanus et al. (2018) argue that this dramatic improvement in safety statistics is, however, not down to substantive improvement in OHS work practice alone, but that the concurrent drop in mineworkers employed in the gold sector has made for the significant difference (Hermanus et al., 2018). The gold sector even today has the highest fatality rate of all the South African mining commodities (Department of Mineral Resources, 2017: 16). Occupational health improvements are less clear cut too, partly because of poor data and reporting, and only recently has the Department of Mineral Resources' Mine Health and Safety Inspectorate (DMR-MHSI) reported a reduction in cases of occupational disease such as silicosis, pulmonary tuberculosis and noise induced hearing loss (NHIL) (Department of Mineral Resources, 2017: 41). Overall, despite the limitations, the improvements in mine safety performance in particular speak to the positive association found between the presence of HSRs and OHS outcomes.

The arrangements for HSRs are well described in highly industrialized contexts (although not necessarily always well described in the mining sector). Descriptions of worker representation in a middle income and newly democratized country such as South Africa are very limited. Arrangements worldwide centre either around joint employer/employee health and safety committees, such as in France (Coutrot, 2009), and/or worker appointed HSRs such as in Canada, Australia and in European countries such as the UK, the Nordic countries and Spain (Frick, 2013; Garcia et al., 2007; Hovden et al., 2008; Milgate et al., 2002; Nichols and Walters, 2009; Walters et al., 2016). It is the latter which is most relevant to South Africa, because large numbers of HSRs are appointed under the MHSA. Article 13 of the ILO Safety and Health in Mining Convention 176, with which the MHSA complies, also provides for HSRs (ILO, 1995). However all global arrangements are contextual and characterized by the varied relationship with organized labour and their effectiveness is often bound up in this (Walters, 1996, 2006). Other preconditions of necessity to autonomous worker representation include the regulator as a supportive legislative steer and the commitment of senior representatives of the employer to a system of representation (Walters, 2006; Walters and Nichols, 2007). A

study conducted in Queensland coal mining, Australia (union density similar to South African mines, more than 75% for 12 of the 19 mines included in the study [Walters et al., 2017: 383]) found representatives were highly effective in the inspection of fatal risks and high potential incidents and in their resistance to the employer by relying heavily on the legislation to make meaning of their role and by reporting regularly to structures of the major mining union (Walters et al., 2017).

Although the MHSA provides direction with respect to the rights and powers of HSRs, it does not stipulate how their interaction with the employer should happen in practice. For example, it does not describe how the HSR in the event of a complaint from a worker/s will in practice take this complaint further, other than scope out the parameters of this engagement under the relevant section of the Act (section 30). Given the context of significant safety improvement in South Africa, this article explores the role of HSRs in the safety management system and their engagement with the safety appointments of the employer. To do this a systems perspective that draws on Luhmann's socio-autopoiesis (Luhmann, 1995) was used to frame the interactions of HSRs with the key role-players in the safety management system. This was achieved by recounting and capturing in a diagrammatic form the communications and interactions between the key role-players as they were described. The implications of these interactions were then considered with respect to the experience of HSRs.

Employer and employee responsibilities and mandatory appointments under the MHSA

The MHSA determines the rights and responsibilities of both employer and employee representatives. The employer carries a statutory duty of care and responsibility for risk management. However it is also a compulsory requirement for worker participation in risk management, and the employer must consult with both HSRs and the mine health and safety committee about the OHS measures to address workplace hazards. Rights of HSRs (section 30) are broadly to make '*representation*' and/or '*recommendation*' to the employer on any matter related to OHS that is affecting workers; second, to contribute to the identification of potential hazards and risks to OHS, and to support the inspection of the workplace; third, to investigate worker complaints regarding OHS. They have powers within their designated workplaces to participate in any OHS inspection, internal audit, consultations with the employer or an inspector from the DMR-MHSI and to request technical assistance with the support of the employer. Section 23(b) instructs the HSR to direct a worker/s to leave a workplace which appears to the HSR to pose a serious danger to OHS.

To ensure that both the employer and employees have the necessary capacity to meet their OHS responsibilities the MHSA sets out mandatory appointments. These appointments frame the mine safety management system. Mandatory appointments are stipulated for the day-to-day operational activities of the mine and for expert OHS functions. The employer must appoint a mine manager (section 3(1)(a)) responsible for day-to-day activities such as the training of employees, risk assessment, health and medical surveillance programmes, ensuring safe and healthy working conditions and the production

activities of mining. On very large mines this obligatory appointment will be found per shaft or section and will report in to an employer representative (a discretionary appointment made by the employer, section 4(1)). Obligatory appointments must also be made with respect to OHS expertise. Specifically for safety, the chief safety officer (Minerals Act regulation 2.17.4) and safety officer (Minerals Act regulation 2.17.1) who may report to either the section 3(1)(a) or section 4(1) appointment.

There are three types of worker HSRs found on South African mines, two of which are mandatory and appointed under the MHSA: the workplace HSR (WHSR) (section 29) and the full-time HSR (FTHSR) (section 26, regulation 6.9.a). The third type of representative are members of the trade union, health and safety structure of the local branch or shaft committee and are not appointed under the MHSA. It is required under the MHSA that every mine with 20 or more employees must have a WHSR elected by workers (section 29(1)) for each shift at each designated working place at the mine (section 25(1)) and responsible for no more than 100 employees. By law WHSRs are given time to fulfil this function, alongside their normal job of employment. Section 26 makes provision for the appointment of an FTHSR subject to an election. An FTHSR relinquishes his or her job of employment for the period of appointment (usually three years). In contrast to the WHSR, the FTHSR is not restricted to a designated workplace and may exercise his or her powers in all parts of the mine for which they are appointed. These arrangements with regard to the numbers, term of office, designated work areas and election process are subject to the mine health and safety collective agreement signed with recognized trade unions on site. On large platinum and gold mines the election of WHSRs usually involves the selection of an alternative too, which on a very large mine effectively means there are several hundred WHSRs on site. Between two and four FTHSRs are commonly appointed per shaft. In comparison with similar mandatory arrangements in advanced economies, the arrangements for worker representation under the MHSA can be considered generous, both with respect to the large numbers of worker elected HSRs on site and because a collective agreement underpins this. For example, FTHSRs once appointed are awarded a significant pay increase under the collective agreement, commensurate to the arrangements that are commonplace for shop stewards on South African mines appointed under the Labour Relations Act No. 66 of 1995 (Republic of South Africa, 2002).

The third type of HSR are union members appointed through union processes to the branch or shaft health and safety structure. Individuals in these positions are most often full-time shop stewards located on the mine site at the union office. There are up to five members of the branch health and safety structure, a chair and deputy, secretary and deputy and treasurer. This structure first appeared on South African mines at the end of the 1980s, where NUM had successfully demanded workplace safety stewards and committees (Stewart and Nite, 2017). Although this structure is not described under the MHSA, the arrangement is perpetuated on large mines. Reference to members from the health and safety structure of organized labour is made using the abbreviation, union health and safety structure (UHSS) in this article.

Although the MHSA makes provision for a mine health and safety committee constituted by employer and employee representatives including HSRs, a discussion of this

structure is not included in this article (note this is a statutory arrangement under the MHSA and not the same as the UHSS described above). Albeit the rights and powers of the mine health and safety committee are extensive and echo those of HSRs, namely '*represent employees on all aspects of health and safety*' (section 36(1)(a)). Figure 1 summarizes the employer/HSR arrangements found on large mines for safety management.

Enforcement practice of the regulator

The intention of the MHSA is to keep HSRs abreast and involved in important developments that involve the DMR-MHSI. The employer is required to inform HSRs of the inspectorate's notice to be on site, and as soon as is practicable, of any serious accident or dangerous occurrence, and to supply a copy of any inspectorate instruction to the HSR representing employees affected by it. HSRs hold the right to participate in consultations with both the employer and inspector. Non-compliance by the employer with provisions of the MHSA has in the last decade been policed firmly by the MHSI through the issuing of section 55 (inspector instructions to, for example, close an affected area) and section 54 penalties (halting part or the whole mine operation) (Chamber of Mines, 2017a). In the event of a section 54 being issued, mine management and HSRs are required to jointly make representations to the satisfaction of a Principal Inspector about remedial actions undertaken to address the non-compliance prior to the lifting of the sanction.

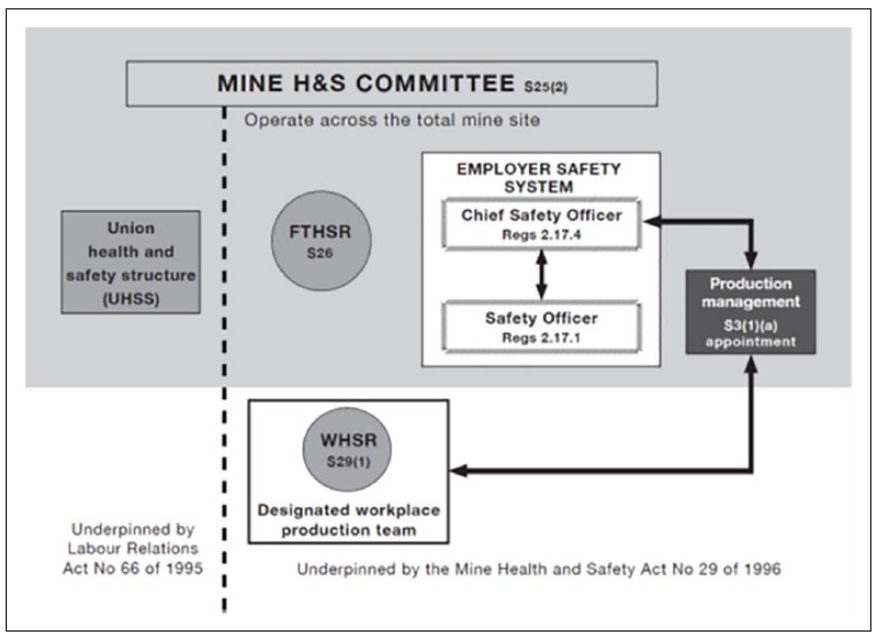


Figure 1. Components of the employer and HSR mine safety management system.

Methodology

A multiple-case study design was used which comprised of four mine sites where data were collected between February 2015 and December 2016 to explore the practice of HSRs. The mine sites – classified using the profile developed by the International Council on Mining and Metals (ICMM, 2012) – included two global senior mining companies (asset base US$3 billion and above) and two intermediate mining companies (asset base US$1–3 billion) with underground operations and more than 500 employees on site. The purposive sample included gold ($n = 1$), platinum ($n = 2$) and diamond ($n = 1$) mines. All sites had signed health and safety collective agreements. Three sites had a formal union health and safety structure (UHSS) on site, with the exception being Site 2, a platinum mine. Site 2 signed a recognition agreement with the trade union AMCU around the time research commenced, so although there was a union OHS representative on site and a signed health and safety agreement, the formal five member UHSS was absent. Sites 3 and 4 had signed recognition and health and safety agreements with NUM. Site 1 recognized both NUM and AMCU, and was in the process of rewriting the health and safety agreement to include AMCU alongside NUM.

Table 1 summarizes data collection at the four sites with respect to the involvement of HSRs in the safety management system. In-depth interviews ($n = 31$) of 60 minutes or more, using a semi-structured guide, were conducted. FTHSRs ($n = 10$) were interviewed up to three times over a maximum period of 18 months about their involvement in safety management. In total 22 interviews were conducted with FTHSRs. The interviews explored FTHSRs' perceptions of their:

- Preparation for the role
- Understanding of the role in relation to the statute
- Day-to-day activities with a specific exploration of the day before the interview
- Challenges commonplace in the execution of their daily activities
- Their relationship with organized labour.

In-depth interviews were also conducted with safety managers ($n = 5$) and the UHSS ($n = 4$). These interviews explored their understanding and engagement with FTHSRs. Focus groups ($n = 4$) involving workers ($n = 37$) were conducted with between 8 and 11 workers per group to understand workers' perceptions of HSRs and specifically the FTHSR.

The study sites included global senior and intermediate mine operations with > 500 employees on site. Therefore the findings may not resonate with small scale or junior producers where the role of HSRs may take a different form.

Ethics clearance was provided by the Human Research Ethics Committee (HREC)-Medical, University of Witwatersrand, Clearance Certificate No. M140701. Participation in the study was voluntary and with informed consent. The analysis took the form of cross-case synthesis because the data told a consistent story across all four sites (Yin, 2014). Transcribed data were thematically analysed using Max QDA 12 using deductive and inductive codes. Two experienced qualitative researchers met to determine interrater reliability and to check for consensus and consistency.

Table 1. Data collection at the four mine sites between February 2015 and December 2016.

Case study sites	# respondents on Site 1 Gold	# respondents Site 2 Platinum	# respondents on Site 3 Diamond	# respondents on Site 4 Platinum	Total # respondents	Total # interviews on site
Start date	Feb. 15	Jun. 15	Mar. 15	Jul. 15		
End date	Feb. 16	Dec. 16	Apr. 16	Sept. 16		
Safety management						
Senior OHS manager	1		1	1	3	3
Chief safety officer		1			1	1
Management coordinator HSRs				1	1	1
Workers						
Focus groups with production workers[a]	1	1	1	1	37 prod. workers in total	4 focus groups
HSRs						
FTHSRs	2	2	3	3	10	22[b]
Union H&S structure	2	1	2	1	6	4

[a]Between 8 and 11 production workers per focus group.
[b]FTHSRs interviewed up to three times over the period of 18 months about matters related to safety.

Results

The employer/HSR safety management system in practice

Figures 2 and 3 illustrate the findings with respect to the employer/employee safety management system in practice. The results showed FTHSRs were engaged in two circular communication loops. The first communication loop, referred to here as '*Loop 1: Workplace production and safety*', concerned the day-to-day interactions between safety management, production management and the two-tier system of HSRs (FTHSRs and WHSRs). The second communication loop, referred to as '*Loop 2: Compliance and enforcement*', concerned the unscheduled, but regular interactions between the DMR-MHSI, mine management, the safety department, FTHSR and UHSS.

FTHSRs at all four sites operated within the parameters of these communication loops. While role-players in both of these circles of communication could point to some positive outcomes for the employer/HSR safety system, there were also ubiquitous difficulties. The results discuss the interactions and difficulties for HSRs operating within the two loops.

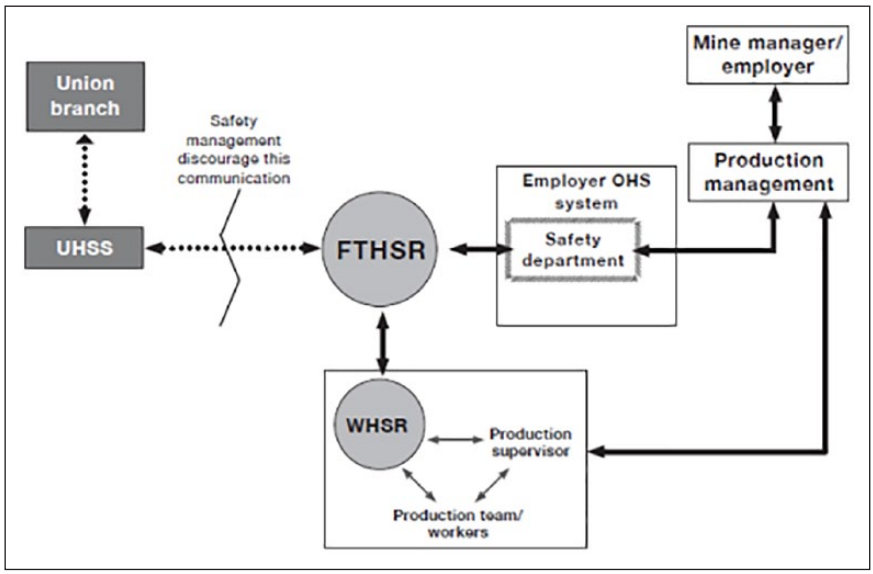


Figure 2. The employer/HSR safety management system, Loop 1: Production and safety. A schematic diagram of the major interactions between the primary role players.

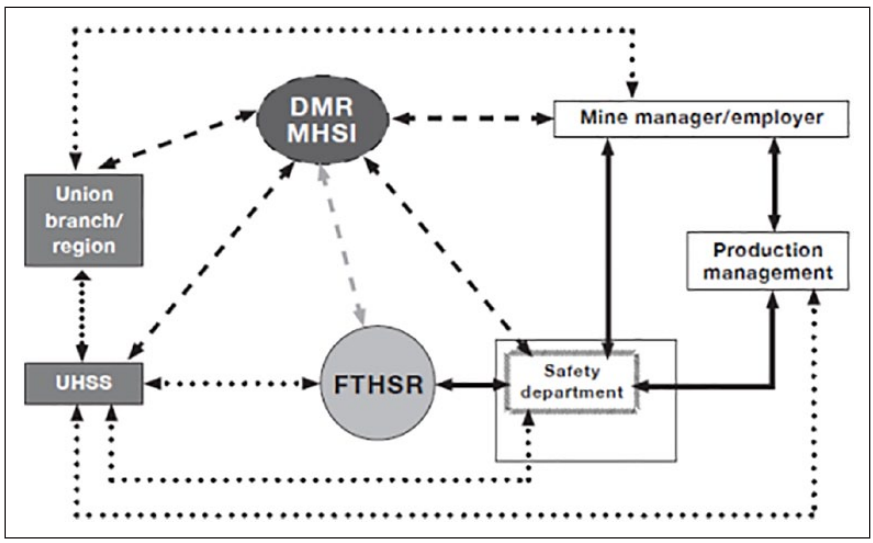


Figure 3. The employer/HSR safety management system, Loop 2: Compliance and enforcement. A schematic diagram of the major interactions between the primary role players.

Loop 1: Workplace production and safety

HSRs provided a two-tier communication system for safety management

FTHSRs and WHSRs created a two-tier communication channel for safety management in the workplace. At all sites the FTHSR reported in to the safety department and FTHSRs were required to interact on a daily basis with WHSRs. As a consequence, the safety department interfaced with the system of production both through the WHSR and production supervisor in the designated workplace, and through daily meetings held with senior production management. This created a powerful circular channel of communication and interaction between safety practitioners, production management and HSRs (illustrated by solid lines between the role-players in Figure 2). These interactions worked in two ways down to, and up from designated workplaces.

Senior safety management expected the chief safety officer and/or safety officer to issue instructions to the FTHSRs and they in turn were expected to act as supervisors of WHSRs. Management talked of FTHSRs having 'subordinates' and their challenge was to get to know the WHSRs. Via this system, HSRs (FTHSRs and WHSRs) were described as able to 'assist' or 'work hand-in-hand' with safety management. FTHSRs cooperated with this and stated that they were part of the safety department and pointed to a thin line between their role and that of the safety officer. One FTHSR stated that a safety officer had a designated section of the mine, while the FTHSR worked across the whole mine site (FTHSR diamond).

The two-tier communication system had a two-fold purpose for the safety department, firstly to reinforce mine standards and safety procedure, described by one safety manager as, 'they [HSRs] can be your voice to the lower level' (Safety manager diamond). And secondly to surface OHS problems with the intention to bring these to the attention of management. FTHSRs and WHSRs were described as management's 'eyes and ears' (Safety manager diamond) or 'watchdogs underground' (Safety manager platinum). Safety management underpinned this role by emphasizing the role of HSRs in continuous risk assessment and by underlining the extent to which human error is the major contributory factor to accidents.

> If it comes to safety if you look at the stats for accidents it's 90% human error. Why are the workers doing that, is not your role [HSRs] to go underground and talk to people? And say to people gentleman we do not comply we are chasing production not safety. (Safety manager gold)

Thus ensuring that workers were adhering to safety procedures, primarily through HSR workplace inspections as part of continuous risk assessment, speaking to workers and the completion of log books or incident notices, and follow-ups where there had been OHS transgressions were the critical activities of HSRs for safety management. The expectation being that OHS transgressions and problems would be brought to safety management's attention via the FTHSR, supported by the 'open door' policy of senior safety management. This then created a fairly seamless communication channel that was welcomed by safety management. As a consequence of this, senior safety management described being close to the FTHSR or having a good relationship. One safety manager

went as far to say ‘If you take out … [name of FTHSR] there isn’t a system’ (Safety manager platinum).

HSRs bridged communication gaps including language, racism and the trust deficit

HSRs and especially FTHSRs assisted safety management with the practicalities of communication. This included communicating information about safety practice in a local language, overcoming racialized communication obstacles between black workers and white managers and bridging the trust deficit between management and workers. FTHSRs (who were all black in this study) were believed by management to have the support/confidence of workers and WHSRs, in part because they were able to explain important safety procedures in a local language on behalf of management. One FTHSR described how safety management would turn to the FTHSR for help if they were having a problem with a group of workers by asking the FTHSR to accompany them. FTHSRs were seen as ideally placed to address the difficulties associated with race and trust at the behest of management on the basis that some workers, including WHSRs, would rather talk to a ‘friend’ or ‘colleague’. One safety manager made reference to a grown mineworker as a ‘boy’, underscoring the above point about both race and trust. However safety management seemed unaware that some workers may see FTHSRs as too closely aligned with the safety department and therefore mine management, to disclose much:

> … maybe they [WHSRs] are afraid that if I [FTHSR] go to the captain I will tell him what they have done, they will tongue lash them. They will never give you the facts why they are doing this. When you pursue questioning him you will never find anything. (FTHSR gold)

Management did not support interactions between FTHSR and the UHSS

At three sites where the UHSS was present, all three safety managers were clear that HSRs and specifically the FTHSRs reported to management rather than to the trade union. One safety manager stated that HSRs were ‘on their own, they are neither with management nor are they with organized labour’ (Safety manager platinum). Safety management used OHS knowledge to make the distinction between the different types of HSR. WHSRs through the FTHSRs reported into the safety department which meant they held an appreciation of the OHS system, whilst the UHSS was believed to spend ‘90% of their time dealing with ER [employee relations] and HR [human resource] issues’ (Safety manager diamond). The same safety manager stated that an example of this would be a discussion about body mass index (BMI) which would be seen as potentially victim blaming, and a threat to job security by the UHSS, and that there would be no appreciation of the underlying science.

Safety management saw the role of the FTHSR as being in the workplace and that attendance at union meetings meant ‘the job of the fulltime suffers’ (Safety manager platinum). FTHSRs were obliged, and in one case it was stated ‘under law’, to report to management and not report to the UHSS. Where there was some reporting to the UHSS,

FTHSRs were described as having been taken advantage of, or, that the union was trying to use the FTHSR for their own benefit:

> … he was like on this meeting and that meeting and I said 'no he is not supposed to be in this meeting that was not his role'. I think he was abused, misused by the union for their advantage. (Safety manager diamond)

The production and safety loop adds value, but FTHSRs looked to organized labour for back-up

Safety management described serious OHS transgressions that were brought to their attention through the two-tier HSR system and they put in effort to enhance this. At Site 2, management for example instituted a highly effective, anonymized incident report form that was handed directly to the FTHSR. FTHSRs also described successfully intervening in instances of serious non-compliant safety practice, such as a worker being requested to operate a winch for which they were not trained, but in these cases the FTHSR turned to organized labour as their 'back-up' or 'bull-dozer in most cases' (FTHSR platinum). In this instance, the FTHSR described conducting a follow-up visit in the workplace to find out what was happening, stopping the production team in the workplace until a trained winch operator arrived on site, speaking with the supervisor, reporting to the UHSS on the shaft (for back-up) and then speaking with the shift boss and mine overseer. At other times too, FTHSRs relied on the UHSS for support to confront abusive supervisors who evaded pertinent safety questions:

> I asked the foreman and he shouted at me very much and he humbled himself only when I had called the shop steward [UHSS] over … that showed me that he understood what I was asking of him … 'Why should that fire extinguisher be used and there be no report for it?' (FTHSR platinum)

All role-players agree production was prioritized over safety and HSRs were powerless in this

Safety management were unanimous in their condemnation of production management, supervisors and the culture of chasing production targets. Supervisors were described by safety management as 'tricky', lacking in 'trustworthiness', 'bullying' and 'disrespectful' of HSRs, especially WHSRs. The UHSS confirmed this and reported that WHSRs complained to them about the lack of respect from their supervisors. Across all four sites safety management described their active engagement with this culture, curbing the worst excesses of it by speaking directly to, or devising strategies to deal with offenders. Safety management described one-on-one confrontations with supervisors, or generalized announcements on a shaft about unacceptable target chasing and coaching of supervisors. Witnesses to target chasing, it was said, were likely to be victimized, which frustrated safety management's efforts to deal directly with the main offenders. However, despite the pervasive bullying faced by the WHSR, safety management were of the opinion that the WHSR should ensure the supervisor does not push for production, and that

the FTHSR must 'help the poor safety rep and they must have a concrete solution with the supervisors' (Safety manager platinum).

> He [WHSR] must understand he has got a dual role, he must look at both sides. Must make sure the workers comply and also the miner [supervisor] does not push the workers to slave purely for production. (Safety manager gold)

The two-tier communication system thus surfaced not only safety problems, but production-related problems too such as bonus payments, unfair treatment and production targets, which are difficulties found in other studies as well (Phakathi, 2018; Shaw, 2010). One safety manager was philosophical about this and suggested this was because many safety professionals have a background in production and are therefore, 'mining guys' who can be relied on to get things done. There was no evidence that safety management tried to redirect these problems to other departments such as mine management, employee relations or human resources. Instead safety management described themselves as being in the middle, either dealing with production management who told stories to 'defend' themselves, or being asked to intervene on behalf of HSRs, who may themselves 'backstab' you. The perpetuation of this meant that WHSRs found themselves at the brunt of production disputes. Workers often frustrated by poor outcomes and the failure of HSRs to get their concerns addressed, blamed WHSRs for production-related disputes.

> Something like the bonuses will always be an issue. The guy [WHSR] will come up and say we had a breakdown and it's not our fault so we lost two days, but we still keep it [production target] at 500 square metres … then he [WHSR] says I [safety manager] must go and convince the management to make the target 450, the guy [manager] is not going to be able to do that because that's in the system, then they [workers] blame the safety rep that they asked for the help and nothing happens. (Safety manager gold)

When asked if the WHSR puts the interests of workers first, production workers said they did, but were emphatic that the role of WHSR was rendered impossible by the prioritization of production over safety. Not being listened to by supervisors was the major obstacle, which was then compounded by what workers acknowledged to be their lack of power to make changes:

> He doesn't have a say since they don't even listen to him, they don't have power whatsoever. (Production worker gold)

Workers stated that WHSRs were in an unforgiving situation that inevitably ended in conflict, either with supervisors, who must deliver production targets, and/or workers who wanted bonus payments and who were prepared to take short cuts to reach targets. This was amplified in the context of contract workers, who were described by one UHSS as working like 'slaves'. Workers reported that WHSRs who confronted the chasing of production targets over safety were accused of 'sabotage', and/or found themselves facing the discrimination of managers. Workers observed that WHSRs would first seek the

support of a supervisor before withdrawing workers from a dangerous workplace, in some instances. On the other hand, workers who chased production made it difficult for WHSRs to assert safety rules:

> Sometimes the people [workers] don't want to work with you [WHSR], because you are sticking to the rules and that's wrong. That's why a lot of people now refuse to be health and safety reps. (NUM health and safety structure gold)

Overall, the general sentiment of workers was summed up by the statement that there was 'no point in having safety reps if no one is going to listen to them' (Production worker gold). And that to make a success of the role, an HSR needed to be fearless, 'You must be full of shit, mustn't be scared of anything' (Production worker platinum). FTHSRs faced similar criticism and were said to lack power:

> He [FTHSR] came with the mine captain and the shift boss, but they refused to let us leave [the workplace] they told us to continue working. He [FTHSR] then told us that we have heard it ourselves and we saw that he has no power. If the mine captain and the shift boss tell us to work we have to. Luckily the place collapsed after we had knocked off. (Production worker gold)

Workers described not understanding the role of the FTHSR, and described them as workplace 'observers' (Production worker platinum). For some workers, their role was poorly differentiated from those of management:

> When they [FTHSRs] get here they just tell us [workers] about production, we end up not knowing where their job starts and ends. (Production worker gold).

HSRs are asking for and are supported by other role-players in their demand for financial incentives

The use of financial incentives in South African mining was first introduced in the 1960s and is a deeply institutionalized practice (Moodie and Ndatshe, 1994). Incentive payments for HSRs were raised by respondents at all sites, but appeared to be paid at two sites only; although in both cases these payments were not described in the respective collective health and safety agreements. At Site 1, gold, US$17 (exchange rate R12.37 to 1 US$) was paid monthly. Safety management were uncomfortable with this payment being unrelated to performance and it was reported there were penalties if the WHSR log book was incomplete. At Site 2, platinum, it was stated that 25% of the team leaders' bonus was paid to HSRs, which approximately amounted to the US$17 paid at Site 1. At Site 3, a quarterly competition was held by safety management between the WHSRs for prizes. At Site 4, management had most recently rewarded all workers for safety performance with a gift, and there were no specific benefits for HSRs, although the absence of these was raised by respondents with researchers.

UHSS respondents stated that no payment, or inadequate payment of 'benefit' money, was the second major grievance of WHSRs, alongside the disrespect shown by supervisors. In focus group discussions some workers suggested that small payments were being made to WHSRs of about US$8 but most were unclear about whether these payments

were regular, or what the exact amounts were. Workers were not opposed to incentive payments and some believed WHSRs worked hard, given the difficulty of their role, and were deserving of this. Safety management too saw the advantages of WHSRs being incentivized through direct financial reward (around US$16 a month) or recognized through the award of gifts. The UHSS and HSRs stated that US$16 was too small, because WHSRs were under pressure. Organized labour wanted WHSRs paid up to US$80 per month. The UHSS at one site stated that WHSRs were open to bribes by supervisors if not properly remunerated.

Incentives for FTHSRs mainly centred on career prospects towards being a safety officer. FTHSRs in this study had all financially benefited on appointment into the role because of the promotion into a higher pay grade. Once in post, FTHSRs looked to the possibility of being a safety officer and at Site 4, one FTHSR was appointed into an acting position of safety officer during the research period. One safety manager supported this and stated that the FTHSR should be on a career path to being a junior safety officer.

Loop 2: Compliance and enforcement

The interactions between role-players in Loop 2 are illustrated in Figure 3. These were not the daily interactions that were characteristic of the communication between the role-players in Loop 1, but were commonplace interactions, and the role-players were mainly acquainted with each other. These interactions were triggered either by notification from the DMR-MHSI of a visit, or were in the event of a reportable OHS incident. Coordination of this communication loop was through senior safety management and notably, in contrast to Loop 1, actively involved the engagement of the UHSS. Production management also interacted directly with the UHSS especially on a specific shaft. The UHSS would escalate issues where necessary to the union branch or regional structure, thus making them a role-player in the compliance and enforcement loop.

Outside of site visits made to the mine by an inspector, respondents reported that the UHSS, the union branch/regional structure and management contacted the MHSI. Only one FTHSR reported that he had requested information from an inspector, which in his case did not meet with success. This suggested a weak communication link between FTHSRs and the MHSI (illustrated in Figure 3 by a paler dashed line). The MHSI would, in turn, interact directly with the employer through the office of the mine manager with respect to enforcement actions and feedback. Thus another circular set of interactions was established between the FTHSRs, the UHSS, the MHSI, mine management (the employer) and the safety department.

The inspectorate added to HSRs' experience of pressure

FTHSRs had both a positive and negative experience of the MHSI. Inspectors were helpful and provided an 'eye opener' on how to deal with hazards. Inspectors also helped with the sanctioning of supervisors. At Site 4 FTHSRs welcomed the dismissal of supervisors as a result of the intervention of the MHSI, and the UHSS described having a 'very good' relationship with the regional Principal Inspector, which involved sharing ideas and regular phone calls. However, inspectors who arrived on site wanting to see the

WHSR and the FTHSR contributed to their difficulties. FTHSRs reported that inspectors pressed them for reasons why they had allowed work to progress in an unsafe workplace, or to provide reasons to keep the mine open given the safety violations, and to state, given these violations, what they would do to improve health and safety performance. De facto, this type of pressure deflected responsibility for OHS transgressions away from the employer, which resonates with the 'creeping responsibilization' I have used to describe the experience of WHSRs (Coulson, 2018).

> He [inspector] would ask for my opinion on how I see the place and my response would be to say that it is unsafe. He would then ask me again if I don't think that that is safe then why would I allow people to continue working there before he comes there? (FTHSR platinum)

Safety management validated this description of the experience of the FTHSR. At Site 4 the safety manager described the role of the HSR as 'sensitive' because he/she must be able to prove to the inspector that he/she had shown the supervisor the hazard. WHSRs were urged to keep log books updated. Where both the supervisor and the WHSR were found by the inspector to have not acted, it was stated that the inspector would issue a 'section 54':

> When the inspector arrives, he then scrutinizes that paper by saying; oh … the safety rep has never attached a signature but how come you Mr. [supervisor] and the safety rep are allowing people to work there and then if the situation is like that, the inspector will give a section 54, he will shut down the mine. In other words the role of the safety rep on a daily basis is a very sensitive one. (Safety manager platinum)

FTHSRs described feeling scared, intimidated and anxious not to add to the potential conflict between mine management and the inspectorate over enforcement actions and instead sometimes choose to say nothing.

> It was a little bit scary because I didn't want to say something which might cause conflict between us [the mine] and the inspector or that might anger him, so I had to be sure to say something which was correct and so I didn't say anything. (FTHSR platinum)

Mine management had an expedient relationship with HSRs

Safety management were of the opinion that senior mine management in general supported HSRs, but in practice theirs was an expedient relationship. One safety manager stated that mine management were supportive of HSRs only insofar as compliance was required, and that once the regulator was out of sight then mine management were clear that the HSR should behave as though he or she is 'part of them' (Safety manager platinum). Mine management it was said ignored the reports of representatives until an inspector found the same faults (NUM UHSS platinum). However in the event of a section 54 being imposed, management appealed to the UHSS for support. UHSS respondents reacted positively to these overtures by management and described the predicament that faced the mine, as 'ours' and not just a problem for the employer. 'It is not just mine or management's mistake but ours combined' (NUM health and safety structure gold).

When faced with the inspectorate, both UHSS and FTHSRs spoke about acting in the best interest of production, to keep the mine operating and saving jobs, in priority to safety. AMCU and NUM did not differ in their stance to the inspectorate and both sided with management in the event of a section 54. One union representative qualified this stance by making reference to the MHSA section 23, which gives an individual mine-worker and HSRs the right to withdraw from a dangerous workplace, which it was stated was there to protect workers, and therefore justified making a stand for production rather than safety (AMCU health and safety structure gold).

> I speak on behalf of the company, I want to be honest on that because the more the company doesn't do anything, it is the more my futures and my fellow employees' future skates on thin ice because if the company decides that they have had enough and they pack up and leave then we don't have any work anymore. (FTHSR gold)

In fact, the UHSS, on occasion, went to extraordinary lengths to avoid a section 54. In one instance, the UHSS described involving the regional chairperson of the union to directly appeal to the MHSI not to close a specific shaft. Another FTHSR described the UHSS appealing to the Principal Inspector, that he or she should be 'lenient' and that the 'union' would make sure injuries came to an end (FTHSR platinum):

> … the DMR wanted to close it [the shaft], we [UHSS] asked that they help us as they are the bigger structure [union regional structure]. We asked that the chairperson go to DMR with me, to tell the DMR what is happening at … [name of] Shaft and that is why it is still not closed. (NUM health and safety structure gold)

Organized labour held independent criticisms of the inspectorate

Despite standing with management when faced with a section 54, the UHSS did hold independent criticisms of the MHSI. Persistent problems raised on several occasions with inspectors were not resolved. In one instance, inspectors were called three times in one year about dust: 'DMR will just come and write notes, and some will just say fix this, and that, but the problem continues' (NUM health and safety structure diamond). It was also felt that the MHSI should take more drastic action against senior production management and the mine manager, such as revoking their tickets/licence to work.

Over the last five years, South Africa has been gripped by the scandal of state capture (Martin and Solomon, 2016). At the centre of this is the corrupt relationship ex-president Jacob Zuma had with a family of business men. At Site 4, the UHSS alleged that the conduct of the MHSI was 'very questionable'. And that the regular imposition of section 54s was a covert campaign by the DMR to run down specific companies so that they too could be bought by corrupt parties with links to the president.

> … there seems to be this campaign orchestrated by this notorious family [Gupta] … that is influencing even the ruling party [ANC] to encroach in some of the companies, in making sure that they make them weak through issuing them with section 54s, such that at the end of the day, these companies are unable to see the day, after losing their financial funding from the investors, so that they can come in and buy these companies. (NUM health and safety structure platinum)

Discussion

The sociologist Luhmann (1995) used the early observations of biological scientists about autopoietic (or self-referencing – or literally the process of a system that produces 'itself from itself') to describe social arrangements that had similarities, which he named socio-autopoietic systems. An autopoietic system is closed with reference to how it is organized, but not isolated from the broader environment with which it will engage (also referred to as enaction). In sociology this boundary is understood in terms of complexity. The internal organization of the autopoietic system reduces complexity in comparison with the external environment where lies infinite complexity (Mele et al., 2010). Another consideration is whether social systems are action or communication driven, about which Luhmann expressed a preference for understanding socio-autopoietic systems through communication (Vanderstraeten, 2012). The application of observations about biology to sociology is highly contested within sociology, because social systems will of necessity need to register certain qualities to comply with autopoiesis. On the other hand, a less rigid application can be helpful to describe social systems that appear to have similarities that are at minimum metaphorical, if not based in science (Mingers, 2002). It is this latter application that has relevance here. The article demonstrates not that the employer/HSR safety management system was self-referencing, but that by using socio-autopoiesis as a metaphor, there was, in practice, a circular or closed system of communication (Loops 1 and 2) in relation to the management of safety that was driven by the communication between the role-players and that de facto simplifies the complexity associated with the social relations of production. The contention is that the circular/closed loops of communication in which HSRs are implicated act against the engagement of autonomous worker representatives at a more strategic level with OHS by simplifying a set of interactions with key role-players that fundamentally keep HSRs disengaged from the context of aggressive production politics.

The broader context

In advanced economies where pluralist arrangements between the employer and employee representatives for OHS are well established, the global neoliberal economic context is attributed with threatening these, by strengthening employer unitarism or dominance; primarily because of weakened union density (decollectivizing industrial relations) and because of an escalation of contract labour (Gunningham, 2008; James and Walters, 2002; Johnstone et al., 2005). Declining over two decades, estimates for union density are now, on average, below 20% across all Organisation for Economic Co-operation (OECD) countries (Ibsen and Tapia, 2017: 175), although not so in South African mining, where union membership is estimated at 80% (Bhorat et al., 2014: 5). Contract workers because of their precarious position in the workplace worldwide are repeatedly shown in studies to be vulnerable to poor OHS outcomes (Gunningham, 2008; Quinlan, 2013). Certainly the significant rise of outsourced contract labour on platinum mines in South Africa contributes to a non-compliant safety culture, either because contractors consent to work in some of the most insecure areas, or because they lack equipment for the job, and because contract workers who work for labour brokers,

who supply contract labour against production agreements, have reported injuries that are hidden in the interest of keeping the mine open and producing (Forrest, 2015).

In hazardous industry, the global growth in the popularity of employer-led behaviour based safety (BBS) approaches has also significantly challenged autonomous representative arrangements. BBS substitutes consultation with autonomous worker representatives for management–worker engagement to secure worker compliance with employer standards and procedure (Gunningham and Sinclair, 2009; Quinlan, 2014; Walters et al., 2017). The evaluation of the employer-led South African sector wide Mine Occupational Safety and Health (MOSH) Leading Practice Adoption System found that employers bypassed the structures for worker representation in favour of surveys to assess worker 'mental models', which is an example of the BBS approach (Hermanus et al., 2015). Thus the outlook for HSRs on South African mines against the bleak global picture is mixed, whilst contract labour and BBS have a foothold in South Africa, a strong trade union presence might have been expected to bolster representation against a slide to employer unitarism.

South Africa is an upper-middle income country with one of the highest Gini-coefficients in the world (Anand et al., 2016). Unemployment for the general population stands at 26.7%, and is higher for those who are younger, 33.4% for those aged between 25 and 33 years (Statistics South Africa, 2018: 23). Jobs are at a premium and there is limited growth in the South African economy. Mining has struggled with significant restructuring in a period of commodity downturn, which has seen 69,000 mining jobs lost between 2012 and 2016 (Chamber of Mines of South Africa, 2017a: 9), about which government has been sharply critical (Duval Smith, 2013). Section 54s have also contributed to an escalation of tension in the sector, with industry arguing it lost up to R4.8 billion of revenue in 2015 alone (Chamber of Mines of South Africa, 2017a: 41). Overall, the general squeeze on jobs and the increased precariousness of work in the sector forefront keeping even marginal business open, and there is little latitude in relation to production.

Production politics is aggressive in South Africa and all respondents in this study said production was at times prioritized over safety. Mineworkers face the brunt of this. Against this backdrop improvements to mineworker remuneration have been hard won (in 2014, AMCU led the longest mining strike in South African history [Sinwell, 2015]), and production bonuses are still a component of mineworker pay. Median monthly wages for mineworkers today (R7500 or US$606 [exchange rate R12.37 to 1 US$]) (Chamber of Mines South Africa, 2017b: 15) are above that of construction and manufacturing workers, but not those of utility workers. Estimates are that for many mineworkers, approximately 60% of their final pay package is basic pay, and 40% is primarily a housing allowance and an incentivized production bonus (Makgetla and Levin, 2016: 41). The proliferation of contract labour on mines adds to this complexity. Forrest (2015) describes how on platinum mines there are wide disparities between the payment structures of workers doing the same job of a rock drill operator, with contract workers almost always being paid less. On gold mines, the improvised strategies of mineworkers and frontline supervisors to overcome common obstacles to the production process, to meet production targets (termed 'planisa'), is a well-documented case of the supremacy of these targets in the contemporary mining workplace (Phakathi, 2018).

The simplification, Loops 1 and 2

In neither loop did worker representatives present an effective challenge to production imperatives, although OHS is fundamentally the product of the process of production. Instead, far from this, management relied on HSRs (in Loop 1) to operationalize their OHS management system, either by communicating safety information, or by bringing OHS transgressions to their attention. In Loop 2 management relied on HSRs to prioritize production when faced with the enforcement action (section 54) of the regulator. HSRs and the UHSS provided no evidence that organized labour would delay a decision on the lifting of a section 54 in the interests of safety, despite the MHSI reporting that a fifth of all such notices were because of poor supervision (such as the target chasing described by respondents in this study) (Department of Mineral Resources, 2017: 26). Neither did organized labour describe arguing for systemic improvements to OHS as a consequence of the serious actions taken by the inspectorate.

HSRs were co-opted by the employer despite knowing that their back-up and power rested in organized labour, and not with the safety department. This is far from the regulatory ideal in which both the employer and the regulator recognize a system of autonomous worker representatives (Walters, 2006; Walters and Nichols, 2007). The payment of financial incentives by the employer to worker elected HSRs is possibly a unique manifestation of co-option, with respect to the global picture of employer dominance in arrangements for HSRs. Surprisingly, all respondents, including organized labour, thought it fair that the employer pay incentives to WHSRs to underpin the management dominated system, despite there being no requirement for HSRs to be paid these under the MHSA, and no mention of these in the site specific health and safety collective agreements.

Employer dominance

Employer or management dominance of HSRs is not new in South Africa and was found prior to the introduction of the MHSA. The Machinery and Occupational Safety Act of 1983 (MOSA) permitted the employer to select worker representatives (Albertyn, 1983). Described as ‘managerial regulation’, Baker (as cited in Zwi et al., 1988) described these appointments as ‘another pair of eyes to assist the employer’, which echoes wording used by safety management in this study. Although MOSA did not apply to the mining industry, new mining regulations under the Mines and Works Act (1988) (Department of Energy and Mineral Affairs, Republic of South Africa, 1988) followed suit and were seen as a state counter to the demands of NUM at the time for independent, worker selected stewards, equivalent to the UHSS of today. These regulations allowed for management appointed safety officers, as well as management appointed worker representatives. Each mine with more than 300 employees had to employ a full-time safety officer. Critics of this argued that the intention behind the new regulations was to transfer the state safety inspection system to mining houses about which even the government mining engineer had doubts over management’s capacity to regulate itself: ‘… unless [the safety officer] is supported by the general manager, who will hopefully be enlightened enough to see that the two roles of safety and production are complementary and not opposed, he will be ineffective and the scheme will be unsuccessful’ (Bachman et al., 1989: 361).

Safety officers conducted inspections, ensured compliance with OHS standards, ensured training for workers, recorded accidents and held inquiries into reportable incidents, while representatives reported hazards they identified, or that were reported to them, to their supervisors. They also accompanied safety officers when they undertook inspections. The role of HSRs in Loop 1 mimics the 1988 regulations precisely because HSRs report in to management, in spite of them being selected by workers. NUM's view was that the supervision of safety under the 1988 regulations was like giving 'an alcoholic the keys to the drinks cabinet' (Bachman et al., 1989: 361). Today, organized labour wants HSRs to be paid incentives to fulfil this role for management, which represents a huge shift in the position of labour, and/or the disregard of the employer of an independent space for labour. Given that the mining regulations (1988) were introduced almost 10 years prior to the introduction of the MHSA and had already laid the basis for worker representatives directed by management, it would appear that management's role has not meaningfully shifted in the proceeding 30 years.

In Queensland, Australia, where union density on coal mines was similar to South Africa, it was found representatives operated effectively despite the unitary intentions of management (Walters et al., 2016, 2017). The arrangements for the appointment of these representatives, their experience and qualifications and powers (especially with respect to the issuing of a suspension order) are markedly different to those of South African representatives and it is not the purpose of this article to detail this. Rather it is to highlight that the conditions on South African mines are not entirely unique. Worker representation can find a powerful expression despite a context that favours employer dominance. It is the capacity of HSRs to act autonomously without reference to management that is exceptionally compromised in the South African context, which given the very high union density is an anomaly.

Organized labour post-apartheid

Although the arrangements between the employer appointees and HSRs are associated with the self-regulation fashioned in the UK in the 1970s (Robens, 1972), this is a widely held misnomer, and arrangements for worker representation in OHS rely on the strength of trade unions (Nichols et al., 2007). South Africa is no exception to this (Stewart and Nite, 2017). When the National Union of Mineworkers (NUM) commissioned a report into mine safety towards the end of the apartheid years, mine fatalities stood at approximately 600 per annum (Leger, 1985). The then NUM General Secretary, Cyril Ramaphosa, stated:

> In the mines, health and safety is the top priority – it is more important than wages. You've got to be alive and uninjured to earn the wages. Therefore to us, health and safety comes first. (Zwi et al., 1988: 700)

HSRs appointed under the MHSA were introduced into South African mines as NUM grappled with the transition into democracy and exposure to the globalized neoliberal labour market. The social movement unionism of the anti-apartheid struggle, with its simultaneous focus on workplace and community struggles, faltered. Instead rank and

file membership was poorly serviced and an internal representation crisis emerged for labour (Webster and Buhlungu, 2004). OHS, once central to the mobilization of NUM in the 1980s, most likely suffered because of this (Botiveau, 2017). Shop stewards, previously the custodians of OHS struggles, were aspirant – either personally careerist (working on the surface and later in jobs for the human resources department [Moodie, 2016]) or entrepreneurial (assisting the employer to recruit a new cadre of black supervisors [Buhlungu and Bezuidenhout, 2008]). A consequent brain drain meant labour almost certainly lost some of its most experienced shop stewards and OHS activists at this time. The subsequent disillusionment, division and a breakdown of trust between membership and leadership within NUM resulted in a struggle for labour territory. The emergence of the more militant AMCU in the last decade is an expression of this.

The tripartite project

The co-option of HSRs by management points to weaknesses in the tripartism at the centre of the MHSA, which determines the arrangements between employers, workers and the regulator. Globally the arrangements for HSRs are associated with positive OHS outcomes (Nichols et al., 2007; Walters and Nichols, 2007; Walters et al., 2016) and the overall positive safety performance of the mining sector post-apartheid would appear to lend weight to this. In support of this a South African study of the right to leave a dangerous workplace (MHSA section 23) found workers were more likely to leave a dangerous workplace under instruction of an HSR than of their own volition (Coulson et al., 2019). However weaknesses in the tripartite project have emerged at the national level, which demands a closer examination of what is contributing to the reported OHS improvements. At the national level, the statutory tripartite Mine Health and Safety Council (required under the MHSA) under the leadership of the MHSI has confronted OHS risk within the parameters of existing mining approaches and has shied away from a more strategic examination of new types of efficiencies, technology and method change that significantly shift the production process and OHS risk (Hermanus et al., 2018). This study found this to be mirrored at the mine site level too. The UHSS offered no critique of management production practices when faced with a section 54 imposed by the MHSI. Neither has the Council provided any critical analysis of what may be contributing to the reported improvements outside OHS practice, such as that provided by Hermanus et al., who argue that it is the contraction of the gold sector that is making for substantive improvements (Hermanus et al., 2018). This article speaks to a schism in the pluralist arrangements between the employer and worker representatives for OHS at the mine operation which would suggest that the potential contribution of HSRs to OHS outcomes has been sullied.

Conclusion

The systems thinking approach – socio-autopoiesis (Luhmann, 1995) – provided a valuable analytical approach to understand the experiences of HSRs in a complex industrial workplace. It mapped concrete commonplace interactions between key role-players rather than presuming a predetermined set of relations. This provided a unique insight

into the compromised position of HSRs and may as an approach hold value for other studies of worker representatives too.

The presence of high union density on South African mines has not held back the tide of employer unitarism in OHS. Although there is a statutory commitment to pluralist arrangements, in practice the safety management system is predominantly a unitary system underpinned increasingly by employer incentives. HSRs formed membership of two closed loops of communication that were dominated by management and that ensured there was no effective challenge to production imperatives. HSRs assisted safety management to manage the worst excesses of the prioritization of production over safety in the workplace and sided with the employer to keep a mine open and producing when faced with harsh enforcement mechanisms of the regulator. The introduction of the MHSA post-apartheid has not shifted the stance of the employer to worker representation away from managerial representation found under Mining Regulations (1988) in place prior to the introduction of the MHSA. Although the reasons for this are unclear, the NUM faced challenges in the transition to democracy and a schism in the OHS pluralist project on South African mines has emerged.

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Original article

Worker health and safety representatives on South African mines: A compassionate voice in the face of employer dominance and health complexity

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ABSTRACT

There is a triple disease burden on South African mines; occupational disease, communicable disease and non-communicable disease (NCD) are all of concern. The Mine Health and Safety Act No 29 of 1996 introduced for the first time, worker elected health and safety representatives (HSRs). Globally, although arrangements for HSRs are associated with better health and safety outcomes, employers increasingly dominate their activities. In-depth interviews (n = 40) were conducted with HSRs (n = 10) and OHS practitioners (n = 15) on four underground mines (gold, platinum and diamond) over 12 to 18 months in 2015-16, to understand how HSRs engaged with health issues, and how the employer responded. Activities across the triple disease burden were categorized as either employer or worker-led activities. While the employer supported HSRs working under their instruction, HSRs faced impediments to their statutory representative role. Employers took advantage of gaps in regulatory guidance. As a consequence of health complexity, and employer dominance, where HSRs acted independently, it was as the compassionate voice to workers. HSRs in middle-income countries take on a meaningfully different role to their counterparts in highly industrialised nations. There are implications, for both regulatory policy and trade union strategy.

1. Introduction

The occupational health of mineworkers has received attention globally. A recent scoping review of health in the extractive sector found that research has been dominated by quantitative health impact studies exploring direct toxic exposures experienced by workers (Brisbos et al., 2019). The complex social arrangements associated with health which affect workers, was identified as a significant research gap. Although the scoping review included a substantial number of studies from South Africa, few studies described health interventions (Brisbos et al., 2019). There is also scant attention paid to the statutory health interventions that support mineworker representation in middle- and low- income countries. Despite the progressive precedent set for worker representation in Africa, under the post-apartheid South African Mine Health and Safety Act (MHSA) No 29 of 1996 as amended (Republic of South Africa, 1996), very little has been written about representatives experience of this, and the relationship to health outcomes.

Worker representation in occupational health in many mining contexts is a statutory health intervention. While it is very poorly described and understood in South Africa, arrangements for employee participation in occupational health and safety (OHS) through employee elected health and safety representatives (HSRs) are well established and defined in highly industrialised mining nations, found in Europe, New Zealand, Canada and Australia (Frick, 2013; Garcia et al., 2009; Harris et al., 2012; Hovden et al., 2008; Lewchuk, 2013; Walters et al., 2016a, 2016b). International Labour Organisation (ILO) Convention 176 Safety and Health in Mining, to which South Africa is a signatory, makes provision for HSRs too (ILO, 1995). In practice, worker elected or selected HSRs, and a joint employer/employee health and safety committee are established in the mine workplace as a mechanism for employer consultation with workers and, in some cases, collective decision making concerning OHS. Although the origins of these pluralist arrangements are frequently referenced to important government commissions held in the UK and in Canada in the 1970s (Robens (Robens, 1972) and Ham (Ham, 1976) respectively), the arrangements were, in fact, a product of much longer labor struggles for improvements to OHS (Storey, 2005; Walters, 1996). An outcome of

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this labor history was the *"preferred model"* for worker representation which ensured that trade union elected representatives formed joint arrangements with the employer. In this model HSRs are members of trade unions, who report into trade union structures and thus are directly associated with the worker collectivism underpinning the arrangements for labor relations(Nichols and Walters, 2009). In unionized workplaces in Europe, Australia and Canada, HSRs remain union appointments (Menéndez et al., 2008; Walters et al., 2018; Walters, Johnstone, et al., 2016). Similarly in South Africa, HSRs are appointed as instructed by the mine health and safety agreement signed by both the recognized trade unions on-site and the employer, as a requirement of the MHSA (Chapter 3).

Globally, it is established that the presence of joint arrangements between the employer and trade unions facilitated through the appointment HSRs is associated with positive OHS outcomes (Menéndez et al., 2008; Walters, 2006). In South Africa, a study of the implementation of the right to refuse dangerous work provided some evidence of the value of HSRs for OHS, because workers were more likely to withdraw from a hazardous workplace under the instruction of a HSR, than of their own volition (Coulson et al., 2019). In the last decade, however, there is a mounting concern that the neoliberalism of the globalized workplace threatens these arrangements, because of the growing dominance of the employer over the activities of HSRs, and the weakness of trade unions (Gunningham, 2008; James and Walters, 2002; Johnstone et al., 2005). Studies show that increasingly HSRs undertake activities that are in the interest of the smooth running of the employer OHS management system, such as supporting behavior-based safety approaches, rather than consulting with the employer about the OHS concerns of workers as intended under relevant legislation (Hovden et al., 2008; Nichols and Walters, 2009; Walters and Wadsworth, 2016; Wright and Spaven, 1999). Diminished labor presence in the workplace has been a significant contributor to employer dominance of the arrangements for worker representatives because increasingly HSRs operate autonomously of any collective power base (Loudoun and Walters, 2009).

Given the challenge to the *"preferred model,"* HSRs globally have adapted their strategies to remain effective in their role and are therefore not solely reliant on the muscle of trade unions to assert themselves in the face of the employer. Hall et al. (2006) argued that the mobilization of OHS knowledge was an effective adaptation to the decline of worker power related to the demise of organized labor (Hall et al., 2006, 2016). They found that HSRs who strategically applied technical and/or legal information that was sourced independently of the employer remained effective. These HSRs, described as *"knowledge activists,"* were distinguished by their commitment to autonomously seek information outside of the employer and their tactical use of information in their engagement of the employer. A New Zealand study found HSRs who had technical expertise could more readily engage at a strategic level with the employer because of their *"specialist craft based expertise"* (Harris et al., 2012: 492). Walters et al. (2016) found HSRs, although unionized on Australian coal mines, operated in a hostile industrial relations context and maintained their highly effective contribution to OHS performance only by careful application and detailed knowledge of the law (Walters, Johnstone, et al., 2016). Thus neoliberal realities have meant HSRs cannot solely rely on the collective power base central to the *"preferred model,"* but must adapt if their role is to have meaning. The application of technical and/or legal knowledge by HSRs is the leading example of this.

In contrast to other global contexts, where diminished trade union density (estimated around 20% (Ibsen and Tapia, 2017)) is argued to have created the conditions for employer dominance of HSRs, on South African mines union density is high, at 80% (Bhorat et al., 2014). However, this has not held back employer dominance. In South Africa, part-time or workplace HSRs on underground mines, working in localized workplaces, or HSRs addressing safety related issues, were found to take on the responsibilities and perspectives of the employer (Coulson, 2018; Coulson and Christofides, 2019). For example, workplace representatives signed off on daily risk assessments to support safe production, especially at the start of a shift. Partiality towards management interests in the implementation of the right to refuse dangerous work on South African mines has also been reported (Coulson et al., 2019). We have argued that the extent to which the South African mine employer has dominated the safety activities of HSRs seems unprecedented (Coulson and Christofides, 2019). What is not known is whether employer dominance extends to activities undertaken by HSRs in the interests of health and if adaptations, such as the tactical use of information by HSRs, may have found expression in the South African mining context.

Employer dominance is not the only challenge that HSRs in South Africa may face when it comes to health. Health on South African mines has grown in complexity since the introduction of the MHSA under which worker HSRs are appointed. Under the MHSA, the definition of the word *"health"* covers all matters related *to "occupational health at mines"* (MHSA Section 102). Two successive, sector-wide voluntary 10 year OHS milestones, set in 2003, and again in 2014 (these are complementary to the MHSA), aimed to achieve significant improvements for priority occupational disease, namely occupational lung disease (especially silicosis associated with gold mining) and noise induced hearing loss (NIHL) (refer to Table 1). Progress towards these targets has been slow, and twenty years on from the promulgation of the Act, the regulator has only now reported improvements (Department of Mineral Resources, 2017). One contributory factor is the communicable disease burdens of human immuno-deficiency virus (HIV) and tuberculosis (TB) that have escalated rapidly in the period since the promulgation of the MHSA. The inclusion of HIV and TB prevalence and incidence targets as part of the 2014 OHS milestones is tangible evidence of this (refer to Table 1). The synergistic disease multiplier of silicosis, HIV and TB on South African gold mines has over the last two decades added enormously to the disease burden on mines (Campbell and Williams, 1999; Murray et al., 2011; Rees et al., 2010). Presently HIV and TB remain higher in all mining communities than in the general population (PHRU, 2017). The government National Strategic Plan for HIV, STI and TB 2016–22 identifies mineworkers as both a key and vulnerable population for HIV and TB programming (South African National AIDS Council, 2017). Non-communicable disease (NCD) in the mining workplace has grown in significance too. Estimates for NCD in the general population are that diabetes and hypertension are of mounting concern (Mayosi et al., 2009). The Minerals Council of South

Table 1
Mine Health and Safety Council (MHSC) OH milestones 2014–2024 for silicosis, NIHL and HIV and TB (Mine Health and Safety Council, 2015).

Milestones
Occupational health: Elimination of respiratory diseases
To eliminate silicosis: By December 2024, 95% of all exposure measurement results will be below the milestone level for respirable crystalline silica of 0.05 mg/m3
Using present diagnostic techniques, no new cases of silicosis will occur amongst previously unexposed individuals
Occupational health: Elimination of NIHL:
Through the quietening of equipment: By December 2024 the total operational or process noise emitted by any equipment must not exceed a milestone sound pressure level of 107 dB(A).
For the individual: By December 2016, no employee's Standard Threshold Shift (STS) will exceed 25 dB from the baseline when averaged at 2000, 3000 and 4000 Hz in one or both ears.
Prevention of TB and HIV/AIDS
Reduction of HIV & AIDS and new TB infections
By December 2024 the TB incidence rate should be at or below the highest of either
• The national TB incidence rate or
• Reduction of new infections in line with the National Strategic Plan (NSP)
• 100% of employees should be offered HIV counselling and testing (HCT) annually with all eligible employees linked to an ART programme as per the NSP, and
• Promote access to prevention services on TB and HIV & AIDS treatment to families and immediate communities of affected employees

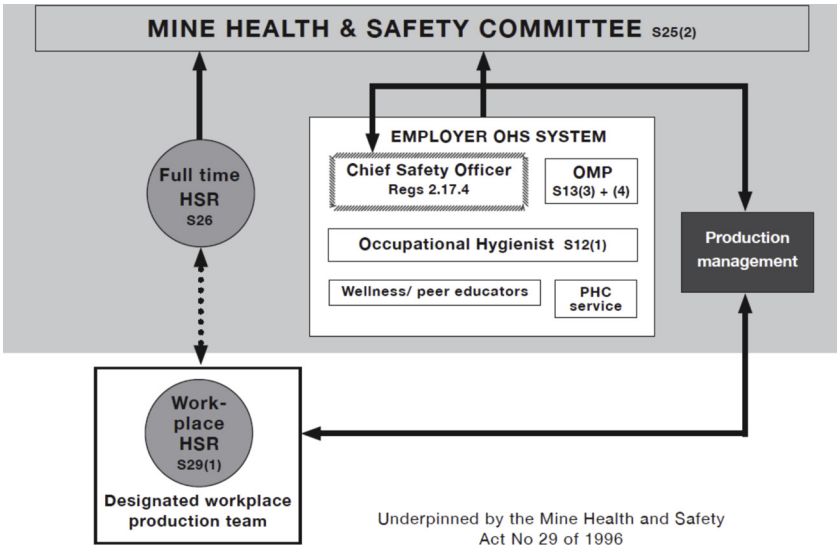


Fig. 1. Occupational health (OH) arrangements for HSRs and employer representatives on large mines.

Africa and the Department of Mineral Resources Mine Health and Safety Inspectorate (DMR-MHSI) have both reported increased incapacitation of mineworkers because of NCDs (Balfour-Kaipa, 2016; Department of Mineral Resources, 2017). Thus mineworkers face a triple disease burden on South African mines, characterized by occupational disease, communicable disease and the emergence of NCD.

Fig. 1 summarises the occupational health arrangements for HSRs and employer OHS representatives on large mines. The arrangements for HSRs are determined by the mine health and safety collective agreement. Two types of HSRs are elected by workers under the MHSA. Full-time HSRs (Section 26) exercise their powers across the whole mine site, and workplace (part-time) HSRs (Section 29 (1)) who share the same powers, but for a designated workplace (Section 25(1)) only. Together they make-up a two tier structure for worker representation. There are many more workplace HSRs than full-time HSRs, and no direct line of communication between them (as shown in Fig. 1 by a broken line).

Part-time/workplace HSRs have been found on a daily basis to facilitate the response of production teams to co-workers who were unwell and/or grappling with emotional distress, which appeared indicative of a high disease burden beyond that associated with occupational disease Coulson, 2018. What is not known is whether HSRs who work in a full-time capacity across the whole mine site extend their activities beyond their statutory role in occupational health too. This paper therefore considers the role of full-time HSRs only.

On election by employees, a full-time HSR relinquishes his or her job of employment for the period of appointment (usually 3 years). Between two and four full-time HSRs are commonly appointed per shaft. The rights and powers of a full-time HSR are in keeping with international and ILO precedents and include the right to represent workers on all matters related to OHS, to conduct workplace inspections and consult with the employer and the regulator (Section 30) (Refer to Table 2). All HSRs are protected from discrimination in their role (Section 83).

Statutory appointments under the MHSA frame the employer OHS management system too. The employer is required to appoint the services of an occupational medical practitioner (OMP) (Section 13 (3) & (4)), an occupational hygienist (Section 12(1)) and a chief safety officer (Minerals Act regulation 2.17.4). Although not a requirement of the MHSA, primary health care (PHC) services are commonly found on large mines; including screening and treatment for HIV and TB, diabetes, and hypertension (including in some instances a peer education service). Social workers (a non-statutory position) provide support/wellness services to mineworkers for personal problems, for example for stress and substance use.

HSRs and employer representatives participate at the joint employer/employee mine health and safety committee which has similar powers to those granted to HSRs (Section 36). This statutory body (Section 25(2)) is weighted in favour of employee representatives with at minimum four employee representatives (selected from amongst the HSRs) and employer representatives equal to, or less than, the number of employee representatives (Section 34(2)(b)). Employer representatives on the committee can be expected to include those appointed into mandatory positions as per the MHSA, and individuals providing PHC and/or wellness services.

This paper explores several questions. Firstly, given the statutory role of HSRs under the MHSA is limited to occupational health, do full-time HSRs in practice respond to the full spectrum of health issues on South African mines? Secondly, is there evidence of employer dominance over the activities of full-time HSRs related to health, and how does the employer exert this dominance? And thirdly, what adaptations to the role of full-time HSRs are emerging given the complexity of health and/or in the event of employer dominance?

2. Methods

Descriptive case studies (Yin, 2014) were conducted at four underground mine sites between February 2015 and December 2016 to explore the practice of HSRs. The mine sites included two global senior mining companies and, two intermediate mining companies (ICMM, 2012), all were underground operations with more than 500 employees workers on site including gold (1 mine), platinum (2 mines) and diamond (1 mine). All mines had appointed full-time HSRs and had signed health and safety collective agreements.

Table 3 summarizes data collection at 4 sites. It outlines the number of participants, as well as their job category for each of the case study sites. In total, in-depth interviews (n = 40) of 60 min or more, using semi-structured guides, with full-time HSRs (n = 10) and employer OHS practitioners (n = 15) were conducted over 12–18 months. All interviews were on-site conducted in either English or a vernacular language. All interviews were transcribed. In-depth interviews (n = 25) were conducted with full-time HSRs who were interviewed up to four times over a maximum period of 18 months, each interview covering different aspects of their role as it relates to health (refer to Table 4). In total, 4 of the 10 full-time HSRs were interviewed 4 times. Reasons for attrition in repeat interviews included the withdrawal of permission for

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Table 2
Section 30 rights and powers of HSRs under the MHSA No 29 of 1996 as amended.

Section of the MHSA	Description
Chapter 3:	
Section 30	Rights and powers of representatives: • Represent employees on all aspects of health and safety • Direct any employee to leave any working place if circumstances arise at the working place • Identify potential hazards and risks to health and safety • Make representation or recommendation to the employer or to a health and safety committee on any matter affecting the health and safety of employees • Inspect any relevant document which must be kept in terms of the MHSA • Request relevant information from an inspector • With the approval of the employer, be assisted by or consult an adviser or technical expert • Attend any meeting of a health and safety committee • Request an inspector to conduct an investigation • Participate in consultations on health and safety with the employer or an inspector • Participate in any health and safety inspection and in any internal health and safety audit • Inspect working places concerning health and safety • Investigate complaints by any employee relating to health and safety • Examine the causes of accidents in collaboration with the employer • Visit the site of an accident • Co-operate with the employer in the conducting of investigations and participate in inquiries • Perform functions agreed by the health and safety committee; or prescribed. NB. The rights and powers apply to health and safety representatives only in respect of the working places for which they are responsible

researchers to be on site (site 3), 1 full-time HSR died and was replaced by a new respondent (site 4), other full-time HSRs were enrolled into the study because of new elections (site 3) or respondents were not available for interview on the day of the research visit (site 2).

In-depth interviews with employer representatives including the occupational medicine specialist, nurse, occupational hygienist, senior safety management, management coordinator of HSRs (site 4 only) and coordinator of peer education/social worker explored their engagement with full-time HSRs. Observations of health and safety committee meetings were conducted at sites 1 and 2. Permission for observation was not granted at site 3. Health and safety committee meetings were not proceeding at site 4 at the time of the research/fieldwork.

Ethics clearance was provided by the Human Research Ethics Committee (HREC)-Medical, University of Witwatersrand, Clearance Certificate No. M140701. Participation in the study was voluntary and with informed consent. The analysis took the form of cross case synthesis because the data told a consistent story across all four sites (Yin, 2014). Transcribed data was thematically analyzed using Max QDA 12 using deductive and inductive codes. Two experienced qualitative researchers met to determine interrater reliability and to check for consensus and consistency.

Table 4
The sequence and focus of four interviews conducted with full-time HSRs.

Interview sequence	Focus of interview
Interview 1	Selection, preparation & understanding of their role
Interview 2	Day-to-day activities with a focus on the day before the interview
Interview 3	Role & understanding of issues related to health
Interview 4	Engagement with organized labor

In this paper, we refer to the occupational medicine specialist, occupational hygienist and nurse as mine health professionals; occupational medicine specialist and nurse as mine medical staff; and all appointments including statutory safety appointments and mine health professionals are collectively referred to as employer representatives.

3. Results

The results found that full-time HSRs were involved in activities across all three disease burdens. Respondents narrated their role in health through descriptions that described occupational health, as well

Table 3
Number of study participants and data collection methods at 4 mine sites.

Case study sites	# respondent on Site 1 Gold	# respondent Site 2 Platinum	# respondent on Site 3 Diamond	# respondent on Site 4 Platinum	Total # respondents	Total # interviews on site
Start date	Feb-15	Jun-15	Mar-15	Jul-15		
End date	Feb-16	Dec-16	April-16	Sept-16		
Employer representatives						
Senior OHS manager	1		1	1	3	3
Chief safety officer		1			1	1
Management coordinator HSRs				1	1	1
OMP	1	1		1	2*	2
OH/PHC Nurse	1		1		2	2
Occupational hygienist	1	1	1	1	4	4
Coordinator peer education/ Social worker	1			1	2	2
Totals					15	15
HSRs						
Full-timeHSRs	2	2	3***	3**	10	25
Non-participant observation at mine health & safety committee	1	1				2

* 1 OMP serviced both sites 2 and 4 **1 full-time HSR died during the course of the research (not an accident), ***2 new full-time HSRs were elected towards the end of the research period.

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Table 5
Employer and worker-led activities of full-time HSRs.

Activities	Employer-led activities – acting under employer instructions	Worker- led activities – acting on worker initiated concerns
	• Hazard identification • Compliance with OHS procedure and PPE use • HIV, TB and NCD health promotion activities	• Raising worker OHS complaints with employer representatives • Attendance at the mine health and safety committee • Assisting individual worker requests for representation in meetings with supervisors • Health promotion, care and support activities

as communicable and NCDs. Concerns about occupational health included silicosis, NIHL, blasting fumes, heat exhaustion, eye problems, fatigue, skin disease, personal hygiene, pests and psychosocial issues such as stress. Communicable diseases included HIV and TB; and NCD, hypertension, diabetes and personal risk factors, such as the use of alcohol, cannabis and smoking.

Full-time HSRs across the four sites undertook both employer and worker-led activities for health (refer to Table 5). Activities categorized as employer-led were undertaken by full-time HSRs under the instruction of safety management. Although not a requirement of the MHSA, all full-time HSRs reported to the safety department, which facilitated employer access to them. Employer-led activities included participation in employer workplace hazard identification, the reinforcement of OHS procedure relevant to occupational health (including compliance with the use of personal protective equipment (PPE)); and communicable disease and NCD health promotion, such as giving educational talks and advice. Activities categorized as worker-led were worker initiated, and included the representation of individual and collective concerns to employer representatives, attendance at the mine health and safety committee and HSR-led care and support activities. Each of these activities is discussed under headings that correlate with those used in Table 5.

3.1. Employer-led activities

Whilst the MHSA provided the architecture for representation, legislation had not translated to the enactment of a role for HSRs in health that was autonomous of the employer. This was despite the role of HSRs in this study being underpinned by a signed health and safety collective agreement at all sites. Not one full-time HSR in this study resisted reporting in to the employer safety department, or saw any limitation with this, with respect to their role. Full-time HSRs demonstrated no appreciation of the effective functioning of HSRs found in other contexts where HSRs are directly supported by trade unions, such as on Queensland coal mines, in Australia (Walters, Johnstone, et al., 2016). Neither did they question their limited access to mine health professionals.

3.1.1. Hazard identification

The identification of potential hazards and risks through inspections conducted independently of the employer is an HSR function (Section 30 and 30(5)A of the MHSA), but HSRs lacked instruments and training to take exposure readings of common hazards such as dust, noise and heat. This was a common complaint of full-time HSRs. Instruments were issued to supervisors and production management only. Contrary to their autonomous role under law, full-time HSRs supported the inspection program of the safety department and relied on the safety department's checklists and sometimes escorted the occupational hygienist when he or she took readings. At site 1, the occupational hygienist described completing inspections in the workplace with full-time HSRs so that they can see that his/her readings are not *"doctored,"* and to keep communication open. The only instance where HSRs were issued with instruments was at site 4, and only then to assist with the preparation of statutory employer investigation reports into NIHL (MHSA Section 11(5)).

> "when the guy records now a level of greater than 5%, we have to do an investigation… so he [Full-time HSR] will go and visit that guy…..He will then interview that guy underground, and now we are getting real value because now he is taking a physical noise measurement at the winch, or at the rock-drill, or whatever he is operating, he is seeing whether the guy is making use of his hearing protection devices," (Occupational hygienist platinum site 4)

3.1.2. Compliance with OHS procedure

Behavior-based OHS approaches are commonplace in mining worldwide (Quinlan, 2014; Walters et al., 2016a) and on South African mines too (Hermanus et al., 2015). These approaches emphasize worker compliance with safety rules rather than more systemic approaches to safety management (Frick, 2011). Full-time HSRs consistently reinforced mine standards for the employer through regular communication with workers, such as the necessity for watering down of areas where people were working, and checked workers for the use of PPE, especially hearing protection devices. This role for full-time HSRs resonated with the role of workplace HSRs who were found to prioritise worker education and communication too (Coulson, 2018).

3.1.3. Health promotion activities

Mine medical staff were acutely aware of the challenge presented by communicable and NCD. They felt the HIV and TB reporting requirements (Department of Mineral Resources, 2019), sector wide milestones for HIV and TB reductions (refer to Table 1) (Mine Health and Safety Council, 2015), and particularly the new guidance for fitness to work (Leon, 1995; Republic of South Africa, 2016) put medical professionals under pressure to ensure workers did not go underground with undiagnosed disease. They passed on these pressures to the full-time HSRs, by involving them in health promotion activities; in a manner, that was reflective of HSR involvement in employer behavior-based safety approaches.

Respondents also had experience of unmanaged ill-health in the workplace and the consequences for workers who were forced to work when they were not well.

> *"There was this guy who had heart problems, he was a rigger ……the guy even collapsed here at the mine because of the heart disease because the engineer told him that if he didn't come on the weekend, then never come back again to the mine.* "(Full-time HSR platinum site 4)

Full-time HSRs, therefore, shared the concern of employer representatives about the necessity for the promotion of health messages related to HIV, TB and NCD, although education activities associated with HIV and TB were more commonplace. In turn, employer representatives relied on them to fill the communication gap between themselves and workers. The daily workplace safety/toolbox talks were regularly used by full-time HSRs to promote HIV and TB prevention, screening and treatment, alongside workplace OHS standards and procedure. At site 4, condoms were provided at the office of full-time HSRs, reinforcing their role in HIV prevention. Employer representatives were unanimous in their desire for HSRs to be more deeply involved in health promotion, and not just in the workplace but, with community outreach too.

> *"If he checks an oke* [person/guy] *coughing then he* [HSR] *needs to say to them that they need to go for TB screening … they are meeting these guys [mineworkers] every day, and so when he* [HSR] *sees him in a tavern every day, he must say to him please when you are joling* [having

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fun] *with the chicks* [women] *you need to use a condom."* (OMP platinum sites 2 and 4)

Mine medical staff saw the opportunity for HSRs to play a proactive role in NCD management too, if equipped with the correct information. In their opinion, HSRs could be relied upon to identify workers who were symptomatic, and to enable their timeously referral to the clinic.

3.2. Worker-led activities

An earlier study (2007) of the involvement of HSRs on South African gold mines in silicosis education found that HSRs were largely unaware of the advocacy and pro-active role envisaged for them under the MHSA (Mine Health and Safety Council, 2007). This study in part refutes this and shows that full-time HSRs were well aware of their representative role and undertook activities that were worker-led. This suggests that the sector wide training of HSRs in the last decade has helped strengthen HSRs understanding of their representative role (Mining Qualifications Authority, 2015). However, full-time HSRs seemed unaware of the role of the mine health and safety committee to represent workers (MHSA Section 36), including as it relates to health issues facing workers, and as a consequence had a limited understanding of the extent of their advocacy powers under the law.

3.2.1. Raising worker OHS complaints

"We visit all workplaces if we find anything wrong we go to the person in charge for resolving that matter sit them down and tell them to sort it out within 7 days." (Full-time HSR gold site 1)

Employer representatives described complaints/concerns being brought to their attention by full-time HSRs. Complaints/concerns were also raised in meetings, mainly at the safety department. At site 2 (diamond), the occupational hygienist described sitting in on meetings of the safety department with full-time HSRs *to 'listen'* to what HSRs had to say. Common complaints raised by full-time HSRs were about excessive exposures (especially dust), about the physical workplace (such as waiting areas that were too exposed and uncomfortable), and difficulties with personal protective equipment. Sometimes complaints originated from workplace HSRs who had no success raising issues with supervisors, which through the full-time HSR, were then brought to the attention of employer representatives (especially the safety department).

Employer representatives described responding to the concerns of HSRs by conducting their own inspections. They were demanding of how concerns should be raised with them, expecting HSRs to be more informed about the nature of the hazard and asking good questions of them that indicated their interest,

"…..if he [full-time HSR] *comes and sits down here and just says explain to me a little bit what is dermatitis, for instance, you know that means he's interested, but if he comes here and sits here and says there's dust at forty-five metre level, go sort it out and you say okay how much dust is there? What creates it? And he says I don't know, he doesn't add value."* (Occupational hygienist gold site 1)

The one full-time HSR who met with obvious success sourced information independently of the employer. In this instance an old structure for health care risk waste was replaced with a secured and compliant storage facility for the mine clinic.

"…he [full-time HSR] *gave me the specs* [health care risk waste storage] *and he made me break the old one down and he got the contractor to be paid, he got the authorization and it was built because of him more than anybody else."* (OMP platinum sites 2 and 4)

This example appeared exceptional, and in most cases full-time HSRs were inadequately resourced to access information. Although full-time HSRs were allocated offices, they were provided with no cell phone airtime or access to the internet at any of the sites. Full-time HSRs were also reliant on safety management rather than mine health professionals for information on all health matters including HIV, TB and NCD. Mine medical staff reported that sometimes full-time HSRs would come to their offices asking for more specific technical information, such as about TB treatment regimens. Mine health professionals were not involved in HSR training and did not know what was taught in the curriculum, but recognized that the role of HSRs would be strengthened if their knowledge was improved. Employer representatives stated full-time HSRs lacked confidence because of their inadequate knowledge.

3.2.2. Attendance of the mine health and safety committee meeting

In contravention of the MHSA, the observed health and safety committee meetings at two sites were heavily weighted in favour of the employer. At site 1, one HSR and 13 employer representatives were present. At site 2, three HSRs and 14 employer representatives were present. Both meetings were chaired by the senior safety manager. Full-time HSRs at all sites understood that they should attend the mine health and safety committee meeting. Comments by respondents showed that some types of worker concerns faced less opposition from the employer than others. Those who challenged the production imperative were met with employer hostility. In other cases, employer respondents took a paternalistic stance to worker complaints and felt the role of the committee was to assist HSRs to understand employer perspectives.

"My obstacles are that … I am telling the mine overseer that his workers are knocking off late and there is no one paying for their overtime then he might tell me those things which are not nice like it is not my duty to tell him about how his workers work and knock off late." (Full-time HSR platinum site 2)

"The fact that the safety rep is sitting in there [mine health and safety committee meeting], *they are not getting victimized or shut down, we allow them to talk even if it's something that is not on the agenda,….. sometimes it's difficult from a managers side* [as we managers know] *why it's working, but in their* [HSRs] *world it's not working, so it's our job to make sure they* [HSRs] *see what we also see…" (Safety manager diamond site 3)*

At both the observed mine health and safety committee meetings, it was union shop stewards rather than the full-time HSRs who asked questions of the employer. This stands to reason given full-time HSRs all reported in on a daily basis to the safety department. Employer respondents were unable to identify any example of where a full-time HSR had added value to the mine health and safety committee and described their role as *"passive."*

"Normally they [full-time HSRs] *would just be passengers just sitting there and not voicing out unless someone tries and digs something out of them…"* (Safety manager platinum site 2)

3.2.3. Representation of individuals in meetings of supervisors

Full-time HSRs assisted individual workers to raise health related issues with supervisors. Issues were varied and reflected the impact of the triple disease burden, but also the handling of health issues by the employer. For example, issues included the worker who had been denied leave over a long period; the worker who had been stabbed but, didn't have a sick note; the worker with TB, but who was fearful of needing regular time off to collect medication; or workers who were fatigued. The reason behind these representations was ubiquitous; workers felt they would not be understood or listened to. Employer representatives concurred with this when it came to supervisors.

"It can happen that if he [worker] *goes straight to his foreman maybe their communication is not good, and so he thought that if he comes with me* [full-time HSR] *then the foreman will understand what he is saying."* (Full-time HSR platinum site 2)

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> *"I think the thing is that these guys* [full-time HSRs] *represent them and they* [workers] *can be listened to unlike if they go by themselves."* (Nurse gold site 1)

3.2.4. Health promotion, care and support to workers

Full-time HSRs provided health promotion, care and support to workers about whom they were concerned. Health promotion activities would happen during union mass meetings or at meetings between HSRs and workers.

> "*Some* [workers] *mostly complain about their eyes or chest,….people used to smoke heavily and we used to talk to them when we were having our own meetings on surface with everyone that people must quit smoking because of the dangers related to smoking…*" (Full-time HSR platinum site 4)

Full-time HSRs at all sites regularly visited mineworkers who had been admitted to hospital. Once workers returned from hospital, they described advising workers on a range of health supportive behaviors such as, *"drink a lot of water," "eat healthily," "take your treatment"* and *"visit the clinic regularly."* In keeping with the sentiments of mine medical staff described earlier, full-time HSRs did on occasion take action to ensure workers got treatment. One respondent (gold site 1), described parading [calling individuals to the mine surface] individuals in the interest of getting them medical attention, in this case for TB.

> *"I eventually took the initiative …….I took out 2 or 3 people from the underground and took them directly to the hospital. It comes back that those people have got TB but they didn't want to admit that, but we counsel them and make them understand that this can be helped …" (Full-time HSR gold site 1)*

4. Discussion

This study explored the day-to-day activities undertaken by full-time HSRs in relation to health on underground mines. The findings of the study are indicative rather than conclusive and should be interpreted in the light of several limitations. As presented in the methods, not all full-time HSRs participated in all stages of the data collection as they were no longer in the position and/or available, and as a result we may have missed some of the dynamics over time. Also, meetings of the mine health and safety committee were observed on two mines, due to permission not being granted on one other mine. Our case comparison in this regard was therefore limited. Lastly, the data represents the views of full-time HSRs and the employer rather than that of the trade unions, and the position of major mining trade unions concerning health needs further exploration. Despite these limitations, the findings make some important observations about the role of full-time HSRs that is worthy of further examination through sector-wide quantitative and other studies.

4.1. The statutory role of HSRs in occupational health

This paper set out to answer three questions. The first concerned the statutory role of HSRs with respect to occupational health. The results showed that independent of whether the activities were worker- or employer-led, in both instances HSRs were involved with activities that went beyond their statutory role to address occupational health on mines (MHSA Section 102). The study showed that it was not only occupational disease that was shaping the role of worker representatives, but the very high communicable disease burden and the increasing NCD burden too. This finding is not reported in highly industrialised nations, where the infectious disease burden is low, and NCDs are better controlled in the general population. Thus worker representatives took on a meaningfully different role to their counterparts in highly industrialised nations in relation to health.

A question then arising from this study, concerns the implications and appropriateness of full-time HSR's involvement in the response to communicable and NCD on mines. Given that health promotion activities are reliant on good communication in many instances, the employer took advantage of full-time HSRs. As a consequence full-time HSRs unwittingly compensated for the employers lack of investment in health, and employers went unchallenged with respect to germane requirements for peer education and workplace wellness programs that are well resourced. Currently the sector-wide training programme for HSRs does not include a specific module covering HIV, TB and NCDs given this is a non-statutory role for representatives, and therefore, HSRs are additionally ill-prepared for their health promotion role (Mining Qualifications Authority, 2015). The role of HSRs (workplace and full-time) in health, in the mining workplace requires supplementary regulatory guidance that goes beyond that offered under the current legislation, which may hold lessons for other middle- and low-income countries too.

4.2. Employer dominance of health related activities of HSRs

The second question concerned employer dominance of full-time HSRs related to health. HSRs undertook a substantial number of activities under the directive of the employer on a daily basis. The day-to-day reporting of full-time HSRs into the safety department profoundly influenced employer access to representatives, and facilitated employers dominating many of their daily activities including those for health. These activities de facto serviced the employer OHS management system, which resonated with global observations (Nichols and Walters, 2009; Ollé-Espluga et al., 2014; Wright and Spaven, 1999). While the employer supported an intensification of employer-led activities, representative activities that were worker-led faced impediments, or veiled opposition from the employer. This thwarted the capacity of full-time HSRs to act independently of the employer, in matters related to worker health.

Of particular note, full-time HSRs lacked resources necessary for their role. The inadequate provision of instruments to take basic exposure reading, and access to the internet, that would facilitate full-time HSRs acting independently of the employer, resulted in the employer being the sole source of expertise for full-time HSRs. Primarily the safety department, rather than mine health professionals, which can reasonably be surmised to contribute to gaps in HSR understanding of health priorities. Presently there is no guidance in the sector with respect to resourcing full-time HSRs as required under the MHSA (MHSA, Section 31(3)) which requires the employer to provide full-time HSRs with *"facilities and assistance necessary to perform their functions."* Mine employers took advantage of this. Given that all mine sites involved in this study were either global senior or intermediate mining companies (ICMM, 2012) full-time HSRs were seriously disadvantaged by being barred from commonplace technology. Employer representatives readily criticized full-time HSRs for their knowledge gaps about health priorities and their lack of confidence, but were shamefully under resourcing representatives.

HSRs appreciation of the authority of the mine health and safety committee to act in the interests of workers was also absent, and therefore their advocacy role was blunted. The daily meetings of the safety department served to undermine the formal consultation of full-time HSRs with employer representatives at the mine health and safety committee. Of considerable concern was that the meetings of the mine health and safety committee at three sites were non-compliant with the MHSA, either because meetings were not constituted on a regular basis, or because meetings were biased by large numbers of employer representatives. This marginalised full-time HSRs further, and a sector wide study to understand the functioning of these statutory committees and the extent to which they have been able to act on behalf of worker concerns is an urgent priority.

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4.3. Adaptations given employer dominance and health complexity

Thirdly, although full-time HSRs appeared passive in the face of demands from the employer, it would be incorrect to suggest that their present day role was only shaped by capitulating to employer demands. Full-time HSRs, in general, did not employ the knowledge-based strategies found in Canada (Hall et al., 2006, 2016), Australia (Walters, Johnstone, et al., 2016) and New Zealand (Harris et al., 2012). Only one full-time HSR (platinum site 4) described approaching employer representatives armed with detailed technical information sourced independently of the employer, which although an isolated finding spoke to Hall's *"knowledge activism"*(Hall et al., 2006, 2016). Contrary to a knowledge based strategy, where full-time HSRs across all four sites universally struck out independently of the employer, it was as the compassionate voice for workers. The willingness of full-time HSRs to accompany individual workers to make requests of intolerant supervisors, to take on the role of health promoter, even parading workers about whom they were concerned, and supporting workers both in and after hospital spoke to HSR compassion, rather than their legal mandate. The primary adaptation to the HSR role being to fill a gap which has arisen because of the absence of employer consideration and empathy for workers.

The dominance of the employer suggests that trade unions in South Africa have not developed a robust response to the health context at a site level. Full-time HSRs, whose role was underpinned by mine health and safety collective at each site, and who were therefore party to the *"preferred model,"* were found to be intervening at the individual, rather than structural level. They primarily provided individual focused educational messages and support, largely as a result of their compassionate stance. Globally trade union activists have been hestitant to incorporate the complexity of contemporary health concerns into union strategy, preferring to focus on servicing individual members (Barry and Loudoun, 2006; Fairbrother, 1996; Loudoun and Walters, 2009). For example, the root cause for workplace stress often lies in the organisation of work (Walters, 2011). Weak trade union strategy was perpetuated in the South African context too. Structural analyses are pertinent for the health priorities on mines which prompted the empathetic actions of HSRs. HIV and TB, for example, owe their high prevalence and incidence to the structural inequities of apartheid mining (Rees et al., 2010). Many mineworkers today live in informal settlements that leave them vulnerable to infectious diseases (Chaskalson, 2016; Makgetla and Levin, 2016). Bullying and racist supervisors have a long history in South African mining (Shaw, 2010; Stewart and Nite, 2017). The sector-wide Culture Transformation Framework aims to change this culture and the elimination of discrimination is one of eleven pillars (Mine Health and Safety Council, 2011). Currently the sector, including trade unions, make no links between the individual actions of full-time HSRs and the sector-wide plan.

5. Conclusion

This study demonstrated the value of a qualitative, case study methodology to understand how worker representatives engaged with health. In the extractive industry, arrangements for worker representation are important and the ratification by six African countries of ILO C176 should be supported. The South African MHSA is aligned with ILO C176, but legislation alone has not ensured the enactment of a role for full-time HSRs that was aligned with the intent of the law. The combination of employer dominance and health complexity meant that where HSRs acted autonomously, it was as the compassionate voice to workers. Thus HSRs in middle- and low-income countries, like South Africa take on a meaningfully different role in relation to health to that of their counterparts in highly industrialised nations.

Legislation without supplementary guidance about the role of HSRs in health is inadequate and this is a valuable insight for other African states as they ratify ILO C176. In South Africa guidance is recommended with respect to the activities of HSRs, their role in generalized communicable and NCD epidemics, their resourcing and the functioning of the joint employer/employee health and safety committee. In the absence of formal guidance, employers were found to exert significant influence over the activities of HSRs. The study found constraints to the enaction of the *"preferred model"* as it related to health because of employer dominance. Neither have trade unions provided full-time HSRs with strategic approaches to pressing health issues at the mine site.

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South African mineworkers' perspectives on the right to refuse dangerous work and the constraints to worker self-regulation

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Synopsis

The Mine, Health and Safety Act No. 29 of 1996, as amended, embodies worker self-regulation to advance health and safety in the workplace. An important provision for this is the Right to Refuse Dangerous Work (RRDW). This paper explores worker perspectives about the implementation of RRDW on South African mines against a backdrop of revised guidance in the sector: '*Guideline for a Mandatory Code of Practice on the Right to Refuse Dangerous Work And Leave Dangerous Working Places*', gazetted in February 2016 by the Department of Mineral Resources (DMR). A mixed methods study conducted at mines (n = 14) included a survey of workers (n = 293), focus groups (n = 6) and in-depth interviews (n = 16). Workers reported a high level of awareness, a positive attitude, and experience of the formal RRDW. However constraints to the formal RRDW meant that informal worker resistance to dangerous work was commonplace. Evidence of informal non-confrontational consultation, cooperation, and collaboration in the event of a dangerous workplace also emerged between workers, and supervisors. The research underscores the importance of the RRDW and worker health and safety representatives to mine health and safety. The revised guidance addresses RRDW implementation gaps, but of concern is the potential partiality towards management interests.

Keywords
health and safety, regulatory framework, worker participation.

Introduction

Ensuring that mineworkers act on their duties and responsibilities for health and safety remains a concern across the globe. Article 13 of the International Labour Organization (ILO) Convention Safety and Health in Mines (176 of 1995) entrenched the Right to Refuse Dangerous Work (RRDW) as an important mechanism through which workers act in the best interests of their own occupational health and safety (OHS) and is considered a cornerstone of worker self-regulation (ILO, 1995). Countries ratifying Convention 176 are under obligation to make this right available to workers through OHS legislation that frames the circumstances, procedure, and protection of workers from discrimination in the event of a formal work refusal. The Convention has been ratified by 31 countries, with South Africa becoming a signatory in June 2000 (ILO, 2000). Worldwide studies show that workers use this right with caution (Hilgert, 2013) and cases associated with work refusal are rarely presented in court (Gunningham, 2007; Cooper, 2013). Rather, in cases of formal notification of a work refusal, issues arising out of this are addressed either in the immediate workplace or through the site OHS system and/or at industrial tribunals or similar mechanisms (Harcourt and Harcourt, 2000).

This paper explores the perspectives of South African mineworkers of the implementation of the RRDW and the consequent constraints to worker self-regulation. It considers the applicability of a typology of worker resistance to unsafe work to the findings of a study commissioned in 2013 by the Mine Health and Safety Council (MHSC) and conducted by the Centre for Sustainability in Mining and Industry (CSMI) at the University of the Witwatersrand (Stewart, Coulson, and Bakker, 2013). Permission to publish was granted by the MHSC in October 2017.

South African legislation

The RRDW was granted to South African mineworkers post-apartheid with the promulgation of the Mine Health and Safety Act No 29 of 1996 as amended (MHSA) (Republic of South Africa, 1996). That OHS performance on mines in South Africa has undergone a significant shift under the MHSA is uncontested by tripartite stakeholders. Reporting by the Mine Health and Safety Inspectorate (MHSI) about progress towards sector-wide OHS targets set in 2003 showed that during the 10 years subsequent to their setting fatalities dropped significantly.

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Whereas in 2004 there were 246 fatalities (0.25 fatality rate per million hours worked) this improved to 93 fatalities (0.09 fatality rate per million hours worked) at the end of 2013 (Chamber of Mines of South Africa, n.d.).The downward trend continued until 2016, when the lowest number of fatalities (73) was recorded (Phakathi, 2016), but reversed in 2017, for which unofficial figures stand at 86 fatalities (Chamber of Mines South Africa, 2018).

The South African expression of RRDW closely reflects that of Convention 176, which grants workers the right to remove themselves from any location at a mine when circumstances arise which appear, with reasonable justification, to pose a serious danger to their health or safety (Masilo and Rautenbach, 2010). Section 23 of the MHSA states that an employee has the right to leave any working place whenever

> '*(a) circumstances arise at that working place which, with reasonable justification, appear to that employee to pose a serious danger to the health or safety of that employee; or*
> *(b) the health and safety representative responsible for that working place directs that employee to leave that working place.'* Section 23 (Republic of South Africa, 1996).

Although under South African law the OHS right is expressed as the Right to Leave a Dangerous Working Place (RLDWP), in practice on South African mine operations it is referred to as '*Section 23*' or the '*Right to Refuse Dangerous Work*', rather than RLDWP. The South African expression of this right, under Section 23, has none of the constraints found in other jurisdictions such as that the danger must be '*imminent*' or '*imminent or unavoidable*', as in Canada, Ghana, Burkina Faso, the UK, and the USA (Hilgert, 2013). The '*circumstances*' in which the right can be exercised are not defined and therefore a worker can, under law, subjectively believe the workplace to be seriously dangerous. Thus, physical conditions in the workplace, the condition of equipment and machinery, and the competence and behaviour of workers are among some of the major factors that could contribute to the workplace being considered dangerous under the Act.

Section 23(b) permits a worker-elected or -selected health and safety (H&S) representative to withdraw workers from a workplace that he or she considers dangerous. On South African mines there are two tiers of H&S representatives, workplace representatives and full-time H&S representatives. Workplace H&S representatives continue with their normal job and exercise their powers in a designated workplace only. Full-time H&S representatives are employed in a full-time capacity in health and safety and exercise their powers across the whole mine site. Both types of H&S representatives can withdraw workers from a workplace they consider dangerous. Chapter 3 of the MHSA requires that the employer enters into a health and safety collective agreement signed with recognized unions on site (the collective agreement is defined in the Labour Relations Act No. 66 of 1995, as amended 2002; Republic of South Africa, 2002). This agreement determines the process and numbers of worker-elected/selected H&S representatives, the constitution of the bipartite mine H&S committee, and importantly, provides for local worker consultation at the mine operation in the drafting, review, and agreement of OHS policy and procedure, including the mine site procedure for the RRDW. These arrangements apply to both large and small mines in South Africa. This is in contrast with other jurisdictions worldwide, where RRDW procedures are part of the statute. On the one hand, a statutory procedure provides clarity about what must be done, but on the other, it opens up the opportunity for legal action to challenge workers on adherence to procedure (Harcourt and Harcourt, 2000; Cooper, 2013). In South Africa, workers are not subject to a statutory procedure and both individual workers and H&S representatives are granted protection from discrimination (Section 83 MHSA) in the event of exercising the RRDW.

A typology of worker resistance to unsafe work

The employer and management determine the structure and organization of the workplace and workers must find ways to assert themselves within this paradigm, through either confrontation or non-confrontational methods such as persuasion, influencing, coaxing, or side-stepping. The decision to withdraw from a dangerous workplace, as in the case of the formal exercise of the RRDW, is a unique situation under law in which workers have permission to '*confront*' the control of the workplace by management. Thus '*confrontation*' is integral to the exercise of the right. Gray (2002) introduced a typology of worker resistance to unsafe work. He described the formal exercise of the legal RRDW as '*formal confrontational*.' By formally refusing to work, a worker, under the protection of the law, can assert control over his or her workplace and demand that the problem be resolved either in the workplace itself, or through escalation to formal structures such as the bipartite worker/employer H&S committee, or through an external agent such as the H&S Inspectorate and/or legal dispute mechanism. The South African '*Guideline for a Mandatory Code of Practice on the Right to Refuse Dangerous Work And Leave Dangerous Working Places*' gazetted in February 2016 by Department of Mineral Resources (DMR) (Department of Mineral Resources, 2016) was a consequence of the study on which this article is based (Stewart, Coulson, and Bakker, 2013). The Guideline promotes the resolution of disputes at the lowest organizational level, or in the event of this failing, through the appointment of an external technical advisor to advise both the mine section manager and the full-time H&S representative. The mine H&S committee is required to monitor all incidents of RRDW. The formal exercise of the right in South Africa, as in other contexts, can, therefore, theoretically result in high-level decision-making related to OHS.

For Gray (2002), however, the formal exercise of the RRDW is only one expression of work refusal. By asking the question, '*when does a safety refusal actually begin*?' Gray explores the origin of worker refusals. His ethnographic work, conducted in the Canadian manufacturing sector, found that workers resist unsafe working conditions without formally refusing. In such cases, a challenge is mounted to the management of the workplace, or to the process of production, but remains outside formal procedure – thereby rendering it '*informal*'. This prompted Gray to name this type of work refusal, '*informal confrontation*'. These efforts on the part of workers most often involve confrontation with

supervisors and/or colleagues to cope with unsafe working conditions and are subsequently resolved in the workplace only, in marked contrast to the first approach (formal confrontation), where a problem can be escalated.

Gray further advances his evidence-based view by arguing that not all forms of work refusal or resistance to unsafe work are confrontational. Thus, a worker can complete a complaint notice and 'ask' ('*informal non-confrontational*') for management to look at the problem rather than '*demanding*' that it be corrected through refusing to work. By laying a written complaint the worker avoids the inevitable confrontation associated with refusing to work, while at the same time he or she is indicating to the employer that something is sub-standard and therefore unsafe. It is long established that workers make private arrangements in the workplace to manage OHS hazards (Walters and Haines, 1988; Phakathi, 2002, 2012). Gray (2002) argues that '*private safety refusals*' by workers are in fact the most common form of work refusal. They include personal interventions of individual workers to redesign a task so it is safer, and avoidance strategies to sidestep unsafe work, such as reporting sick or asking for a transfer. These strategies are all driven by OHS concerns, but do not challenge, or confront, either management and/or the social relations of production. Rather, the reasons behind these individual actions remain hidden. Thus, Gray provides a useful typology with which to consider worker responses to an unsafe workplace – formal confrontational, informal confrontational, and informal non-confrontational.

This paper draws on Gray's typology to assist the interpretation of the findings of a mixed methods study with respect to South African mineworker experience of the RRDW.

Methodology

The cross-sectional study used a concurrent triangulation mixed methods approach (Cresswell *et al.*, 2003). Quantitative and qualitative data were collected at the same time and then integrated and triangulated at the data analysis stage. Fieldwork was conducted between June and September 2013 and comprised a representative quantitative survey, focus group discussions. and key informant interviews. Access to the two sets of respondents for the quantitative survey and the qualitative research was primarily facilitated by the training centre on surface at each mine. The study had approval from the Human Research Ethics Committee (HREC) non-medical, University of Witwatersrand (Ethics Clearance Protocol Number H13/05/19). Respondents participated on the basis of informed consent and anonymity.

Quantitative survey

The survey was conducted at 14 mine sites (five platinum, five coal, three gold, and one nickel mine), stratified by commodity sector and geographical spread across three provinces: Mpumalanga, Gauteng, and North West. As specified in the MHSC research brief and time-frame, a list of all the major mines employing 2000 and more employees in these three provinces was drawn up. Mines were contacted telephonically to identify sites able and willing to host the project. The sites were all large mines with established OHS systems, hence this research has relevance for the large-scale mining sector but excludes the small-scale sector. The timeline and budget did not allow for a comprehensive and random sample to be drawn from employee wage rolls or from specific workplaces. Surveys were instead administered on different days and times of day to respondents on surface undergoing ex-leave induction. This is a limitation of this study. The survey nevertheless reached workers (n = 293) (refer to Table I) with findings statistically having a simple margin of error of 5.7%. The quantitative research instrument comprised 40 closed and Likert-type statements or questions and one open-ended question. The questionnaire was read to respondents in either English or an indigenous language, predominantly isiZulu, isiXhosa, or Southern Sotho.

Qualitative research

Qualitative research was conducted at six of the 14 host sites – two gold, two platinum, and two coal mines. Six focus groups were conducted with 84 workers, one at each site, and were recorded, translated, and transcribed. In-depth interviews were conducted with five H&S representatives and five union officials at five sites only. Six worker respondents were identified in focus group discussions as having had a direct experience of the RRDW, all of whom worked on gold mines and were subsequently interviewed. All the key informant interviews were conducted in English and notes were taken. The purpose of the qualitative research was to identify key issues, concerns, and themes relating to the RRDW as expressed by worker respondents and other relevant key informants. While saturation point was not reached, specific data repeatedly emerged. Quotations cited in the text were invariably similarly reported by other respondents.

Given that the RRDW is legally bestowed on workers, this paper focuses on the experience of workers and their H&S and union representatives. Mine site documentation made available to researchers, such as lists of incidents and accidents and incident/injury investigation reports, was not consistent across the host mining companies and did not enable the details of specific RRDW incidents described by respondents to be corroborated through a document review. Researchers (including the authors) noted evidence arising through observation at research sites of mine-site communication concerning the RRDW.

Analysis

Quantitative data was analysed using Statistical Package for the Social Sciences (SPSS), Version 15.0. All qualitative data was analysed for inductive and deductive themes. The analysis used a concurrent triangulation approach, thus both quantitative and qualitative data were used to make meaning

Table I

Quantitative survey: number of worker respondents per sector

Respondent category	Coal and other	Gold	Platinum	Total
Workers	109	64	120	293

of workers' experiences of the RRDW. Quantitative data was largely not analysed against cross-correlations for demographic and other descriptors. Workers included in the focus group discussions were not selected for certain demographic or other characteristics.

Findings

The term 'workers' is used in this paper to refer to both permanent mine employees and contract workers, except at a couple of points. As the terms '*Section 23*' and '*Right to Refuse Dangerous Work*' (RRDW) were used by workers in their commentary, both these terms are used in the presentation of the data. Findings are presented under three major headings, which are broadly aligned with the typology developed by Gray (2002): formal confrontation, informal confrontation, and non-confrontational responses to the exercise of the RRDW when faced with a dangerous workplace. Percentage figures used in the findings are drawn from the survey results. Quotations and other descriptions are taken from the qualitative data.

Demographics of worker respondents

Table II captures the demographic characteristics of the survey population of worker respondents, 65% of whom were over 30 years of age and 88% were men. Seventy-two per cent of workers reported more than 3 years of service at the present mine operation and 42% reported more than 6 years of service. A fifth of the sample were contract workers, in keeping with estimates cited elsewhere (Forrest, 2013). Overall, the experience and stability of the sample suggested respondents were qualified to consider the topic of the RRDW.

Table II

Demographic profile survey respondents (*n* = 293)

Variable	Category	No. of respondents	%
Age	21-30 years	93	32
	31-40 years	97	33
	41-50 years	61	21
	51+	40	14
Sex	Male	257	88
	Female	35	12
Race	African	272	93
	Coloured	3	1
	White	17	6
Citizenship	South African	253	87
	Non-South African	39	13
Job status	Employee	228	78
	Contractor	60	20
	Don't know	5	2
Years in mining	< 1 year	29	10
	1-2 years	35	12
	3-5 years	80	27
	6-10 years	63	22
	> 10 years	85	29
Years at mine (where research conducted)	< 1 year	28	10
	1-2 years	52	18
	3-5 years	89	30
	6-10 years	60	20
	> 10 years	63	22

Formal exercise of the RRDW (formal confrontation)

These findings describe quantitative and qualitative data pertinent to the formal exercise of the RRDW, including workers' awareness, attitude, knowledge of procedure, and experience of the RRDW.

Awareness of the RRDW

Awareness of the RRDW was high. Ninety-five per cent of workers reported having heard of the RRDW, with uniformly high reporting across all mining commodities.

> '*The law does not allow people to work in dangerous places. Should one disobey such a law, he is reprimanded.*' (worker)

On site, researchers found evidence of communication campaigns promoting the RRDW. Noticeboards in waiting areas, audiovisual displays, leaflets, stickers on hard hats, internal radio, RRDW cards, and toolbox talks were used at different sites to reinforce awareness of the RRDW. On one coal mine, the mine manager issued each employee with a card bearing his signature making the 'demand' that all mine employees exercise their RRDW.

Worker attitudes to the RRDW

Given the South African mining industry's legacy of discrimination, appalling OHS performance, and victim blaming (Shaw, 2010; Stewart and Nite, 2017), researchers were surprised by the positive response of workers to statements used to reveal prevailing attitudes to OHS. The majority of workers stated they 'disagree' (79%) with the statement, '*Workers don't have the RRDW*' (refer to Figure 1), which was reinforced by number of employees (84%) and contractors (83%) reporting feeling 'safe' at work. A third of the sample (35%), however, agreed with the statement '*Management is not serious on health and safety*', which underlines why the '*Culture Transformation Framework*' in the South African mining sector, with its commitment to transform legacy issues that encourage short cuts and risk-taking with respect to OHS, is pertinent. (Mine Health and Safety Council, 2011).

Although the majority of workers stated that they '*have the RRDW*', over a third of workers (35%) agreed that '*workers use danger as an excuse*' and that the RRDW is open to abuse. While the underlying reasons for the specific individuals saying this were not explored, the RRDW is cited in industrial struggles other than those associated with OHS (*National Union of Mineworkers & others v Chrober Slate*

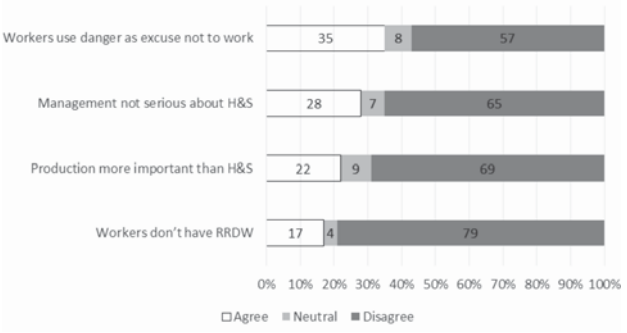


Figure 1—Worker (*n* = 293) attitudes to the RRDW, OHS, and production

(Pty) Ltd, 2008). The RRDW was used at the start of the 2012 platinum mineworkers' strike for wage increases (Chinguno, 2015; Moodie, 2016). In this instance, mineworkers invoked Section 23 to decisively slow down production in order to draw attention to their demands outside established industrial relations mechanisms. That the RRDW was used in this instance to leverage worker improvements, outside of OHS, supports workers' (35%) views noted in this study, that the RRDW is open to abuse.

RRDW procedure

Employer risk management underpins the MHSA and involves the identification of hazards, associated risk assessment, and the implementation of control measures – for which there is a hierarchy of options. Risk assessment under the MHSA is required as a baseline, is issue-based (where more in-depth assessment is required), and designed to be continuous (on a day-by-day or periodic basis). Ground conditions, gas emissions, airborne pollutants, and the condition of equipment are good examples of matters subject to continuous risk assessment. It is regarding the continuous risk assessments where the RRDW has most currency for workers. The interface between risk assessment, safety rules, and RRDW procedure was found in this study to be poorly articulated. Although workers (96%) understood there was a procedure for RRDW, as is required under the MHSA, in focus group discussions many workers could not articulate the steps of a RRDW procedure. Despite the requirement under the MHSA for a RRDW procedure to be developed on site in consultation with worker representatives as a component of the H&S collective agreement, workers reported being neither involved in the preparation of a RRDW procedure, nor able to state how a procedure had been developed. While it could be expected that any formulation of the procedure for the RRDW must be: to stop work, remove oneself, inform others of the danger, barricade the area, and report the incident, instead, when asked about RRDW procedure, workers cited general safety rules and procedures such as:

> '*1. Never enter an unsupported roof. 2. Never operate a machine without a licence. 3. Lock out and do not allow someone to enter a dangerous workplace. 4. Do not enter a place with no ventilation.*' (worker)
>
> '*They say if the place is dangerous you must fix it first. It is one of the four steps. It says: Fix the place. Evaluate the material you are using to make sure that it is proper so as to prevent danger. The third one – stick to the process of safety. And the last one says you must fix it now.*' (worker)

The RRDW applied to safety rather than the protection of health

Major hazards contributing to occupational disease must be considered within any risk management framework. However, improvements in occupational health (OH), especially related to silicosis and noise-induced hearing loss, have been slow in the South African mining sector (Murray, Davies, and Rees, 2011; Strauss *et al.*, 2012), only recently showing signs of improvement (Department of Mineral Resources, 2017). Qualitative research findings in this study suggested the RRDW is overwhelmingly embedded in the safety culture of mines rather than health protection. Workers contextualized their commentary about RRDW with reference to specific safety hazards such as rockfalls.

> '*We talk about safety. We say we must respect danger and not work in a dangerous place. We say we must be cautious of places where we are working in. Let us look at the hangingwalls.*' (worker)

Although excessive dust and poor ventilation were cited in some instances by respondents as grounds for exercising the RRDW, there was no mention of excessive noise or fatigue. In focus groups, workers described their experience of fatigue and its association with dangerous work practice, but not in conjunction with the exercise of the RRDW. Fatigue was attributed to the absence of team members, walking long distances carrying equipment, working long hours, hunger, or exposure to heat, but not cited as a reason to stop work.

> '*I would advise the mine to employ more people. We are short. You are forced to do many jobs alone and that is tiring.*' (worker)

When asked in the quantitative survey about training on major hazards in the last 12 months, reported training related to dust was lower than that for either support standards or hangingwall conditions for underground gold and platinum employees (refer to Figure 2). This suggests there could be gaps in worker knowledge related to dust and respiratory disease. Researchers did not, however, review training materials and programmes related to worker preparation for the exercise of the RRDW and/or worker tuition related to the identification of major hazards to corroborate this. Another explanation for the disconnection between worker exposure to OH hazards and the exercise of the RRDW is the latency period between exposure to hazards such as dust and noise and the final onset of disease. Although over time, many more workers have suffered the consequences of occupational disease rather than occupational injury (Guild *et al.*, 2001), unless the trajectory of disease is well understood it is unlikely that workers see exposure to health hazards as life-threatening and meriting the exercise of the RRDW.

Individual responses of full-time employees and contractors to a dangerous workplace

Forty-five per cent of workers, represented by employees (48%) and contractors (34%), reported that they had personal experience of a dangerous workplace in which they did not want to work (refer to Figure 3), with 76% of these incidents having occurred in the last three years. It is

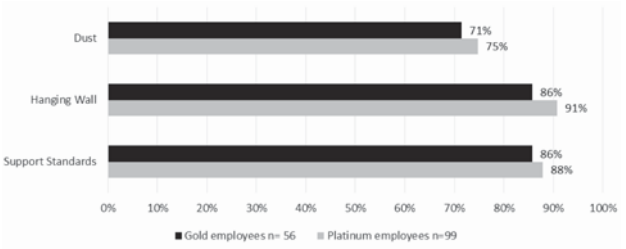


Figure 2—Training reported by underground employees in the last 12 months on the major hazards in gold and platinum, as reported by underground employees

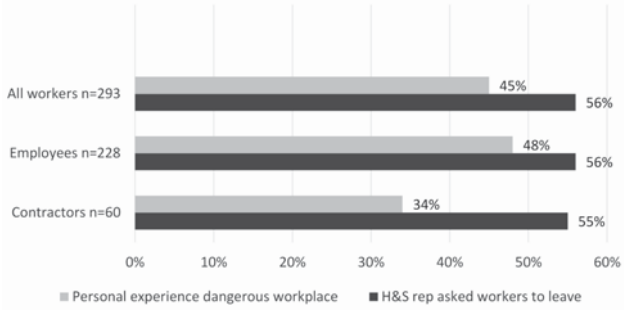


Figure 3—Workers, employees, and contractors who reported a personal experience of a workplace too dangerous to work in, and who had been asked to by an H&S representative to leave a dangerous workplace

noteworthy that contractors were less likely to report personal experience of a dangerous workplace than full-time mine employees, which suggested contractors were less equipped to make this call. Worldwide, it is well established that contractors are vulnerable with respect to workplace hazards OHS (Tucker, 2013; Gunningham, 2008), as has been reported on South African mines (Loewenson, 2001; Bezuidenhout and Kenny, 1999; Hermanus, 2007). As the employment of contract workers increases, specifically on South African platinum mines (Forrest, 2015), the finding that they are less equipped to respond to a dangerous workplace is of concern.

Of the 45% of workers (n = 132) who had identified a workplace too dangerous for work, 65% (n = 86) did not return to the unsafe workplace (exercising the formal RRDW) and 83% thought the RRDW procedure adequate. Figure 4 provides a description of those who successfully exercised the RRDW. Of note, the majority were underground workers (87%) and had more than 2 years' mining experience. Of the overall sample, of all workers (n = 293) it can be inferred that 29% of these had exercised the formal RRDW, by having not continued in a workplace they had judged to be dangerous.

Workers' experiences of management's response to the RRDW

Weighing up production pressure against working safely and '*feeling bad*' because of lost production (and hence lost bonus earnings) were described by workers as part of their experience of the formal RRDW. The payment of production bonuses has a long history in South African mining and is a deeply entrenched practice (Moodie and Ndatshe, 1994). In fact, worker and supervisor self-interest in reaching production targets and securing production bonuses impacted on both 'formal' and 'informal' confrontation in response to a dangerous workplace because bonuses pitch production against safety. A culture of short cuts to overcome common obstacles to the production process is well described in the gold sector (Phakathi, 2002, 2018). Qualitative data revealed that when workers had exercised the RRDW, supervisors and management were either straightforwardly cooperative, or pushed back but complied. In both instances underlying concerns about money shaped the emotional response; workers, supervisors, and managers often felt '*bad*' because workers lost bonuses, supervisors lost production (and bonus earnings), and managers faced additional expenditure.

> '*We the workers identified the hazard. As a team we took the decision to stop working... Both supervisors and the H&S representative made the decision and supported us to stop working. ...The safety officer recommended that the panel must be mined from another direction and the situation got resolved. The rock engineer was involved and workplace was made safe... there was a loss of production due to the incident. I felt bad because we lost production. They also felt bad - including the reps, the supervisors and managers.*' (worker)
>
> '*I was working on Sunday... In the stopes there were misfires... we could not work, but the matter was taken to the Foreman who was very cross about our decision. He was forced to book us for another Sunday to come and perform the same job*' (worker)

The role of the H&S representative in implementing the RRDW

Worker-elected H&S representatives are acknowledged globally to contribute to better OHS outcomes (Walters, 2006; Walters and Nichols, 2007). In keeping with this, 56% of workers reported they had been asked to stop work by an H&S representative, which was higher than those workers (48%) who reported a personal experience of a workplace in which it was too dangerous to work (refer to Figure 3) and higher than the workers (29%) who exercised the RRDW. However, the survey did not establish if workers, having withdrawn from a workplace under instruction from an H&S representative, went back only when they felt it was safe to do so. Qualitative data found that workers consistently referred to the workplace H&S representative before and after withdrawing from a workplace.

> '*If it is dangerous underground we talk to the safety rep and we take it from there. The safety rep is always with us underground.*' (worker)

Although they were more likely to be asked to withdraw from a workplace under the instruction of an H&S representative, workers were then critical of the capacity of individual H&S representatives to challenge supervisors and to subsequently get workplaces made safe. Workers suggested that either the H&S representative lacked power and/or interpreted his or her role incorrectly.

> '*Before that when I was in a dangerous place I went to the waiting place. When he [the miner] saw me he*



Figure 4—Workers (n = 86) who exercised the RRDW and did not return to an unsafe workplace

started shouting at me. The safety rep was there, but he never said anything. He did not really care as they do not have powers.' (worker)

'*However, there are times whereby the safety rep is not working properly. For instance, if there is a place that is not safe to work in, he will go to the Supervisor and report the matter after he has barricaded the place. The question is what if that place is not fixed for 6 months?*' (worker)

As a consequence, hazards triggering the withdrawal of workers from the workplace appeared unlikely to be escalated beyond the immediate workplace.

Informal exercise of the RRDW (informal confrontation)

The formal exercise of the RRDW was not found to be the default position for mineworkers concerned about a dangerous workplace. Instead there were several commonplace impediments to the exercise of the right that in practice rendered worker responses to a dangerous workplace as instances of 'informal confrontation'. Most of these constraints to the exercise of the formal right were best described in the qualitative data. However, the survey revealed that of workers (45%) who reported experiencing a dangerous workplace that they had judged to be unsafe for work, almost a third (32%) ended up back in the workplace despite this. Possible explanations for this are that concerns about the disputed workplace were not resolved to the satisfaction of workers and not escalated beyond the immediate workplace, or that these workers experienced pressure (from other workers) or coercion (from supervisors) and returned unsatisfied to the workplace, having failed in their formal exercise of the RRDW. Such workers would then have faced a situation of informal confrontation. Qualitative data revealed a complex set of issues that arose with respect to exercising the RRDW. These issues focused mainly on stories of confrontations with supervisors and co-workers which had not been formally managed, and related to contextual factors in the workplace.

One such contextual factor was the difficulty of working in a production team. One respondent described how the team blurred his or her judgement by 'normalizing' a situation he or she had, in the first instance, judged to be dangerous.

'*We refused, but then continued blasting maybe 10 of us in a crew … you even forget you are in that dangerous place.*' (worker)

More positively, another respondent answered that: '*Communication in the team facilitates RRDW.*' However, in the absence of effective communication, once a worker withdrew from the workplace he or she faced possible confrontation with other team members, either with or without the backing of a supervisor.

'*I stopped working for 35–40 minutes waiting for the miner… they (my production team) were cross. One of the team was very cross and said he can't work like this.*' (worker after exercising the RRDW)

The same worker said:

'*No! They [other workers] wanted to leave, but after discussion with the miner [supervisor] they had to carry on working … I think the miner was not supposed to pressurize the operators. I don't know what would have happened if they refused to work.*' (worker)

A second contextual factor was fear. Workers described being either too scared to report dangerous circumstances and/or were fearful of repercussions.

'*Even if there is (Section 23) we are afraid to speak out. We are afraid because we might lose our jobs.*' (worker)

Workers specifically described supervisor threats and vindictive behaviour that suggested worker fears were not unfounded.

'*For instance, if you refuse to work the shift boss will tell you about his qualifications. Therefore, you are forced to go and work because he is more educated than yo*u.' (worker)

'*[If] I refuse and tell you that I cannot work in these conditions then he [the supervisor] will send for your colleague and your colleague will go and work. But he will victimize you because you refused and the treatment you get will be different from others. [If] You have a personal problem one day, he will not help you because of what you did the other day, that you refused to work in a dangerous place.*' (worker)

In fact, the RRDW was described by one worker as being part of an impossible choice. It was often a case of either getting 'in[to] trouble' when exercising the RRDW or being 'at fault' in the event of a subsequent accident.

'*Once you practice section 23 you are in trouble. But if you tell people to go and work in a dangerous place and something like an accident happens, you are at fault.*' (worker).

Informal non-confrontation, consultation, and keeping quiet in a dangerous workplace

From the quantitative survey results it can be inferred that the informal non-confrontational approach to dangerous workplaces may predominate over confrontation, whether formal or informal. Of the workers (45%) who had a personal experience of a workplace that was unsafe for work, very few workers (4%) did not speak with anyone, which showed that almost all workers voiced their concerns.

When asked to mention everyone they spoke to, workers stated their supervisor (71%, which rose as high as 87% on gold mines), colleagues (58%), management (27%), their H&S representatives (32%), their union representative (33%), and 10% noted 'others' to whom they spoke (refer to Figure 5). This strongly suggested wide consultation, cooperation, and collaboration in the immediate workplace, especially with supervisors, which is not necessarily or inevitably confrontational when assessing workplace OHS issues in general, and the exercise of the RRDW in particular.

In the qualitative data, by way of contrast, a trade unionist noted that workers' earlier fears with respect to a specific worksite may only emerge once an accident has occurred. This suggests that in some instances workers also keep quiet about their concerns about a dangerous workplace, although in this case it does not preclude workers from engagement with colleagues.

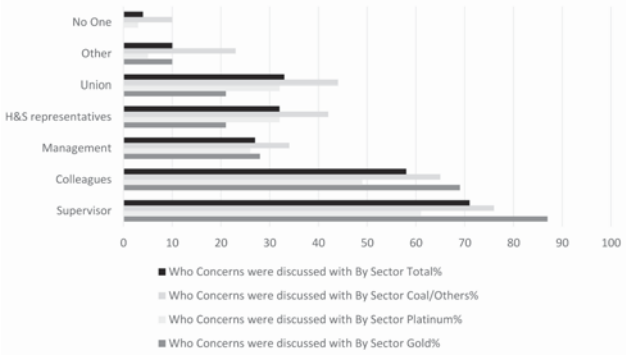


Figure 5—Who workers (n = 132) discussed their concerns with when faced with a dangerous workplace where they did not want to work

> '*It is when there is a problem of an injury is the time when you will hear workers saying we have seen that place is wrong, but we were afraid to report it.*' (trade unionist)

Discussion

The RRDW is the only mechanism under law through which an individual worker can exercise direct control over health and safety in the workplace. This right underpins self-regulation in OHS for workers. While non-compliant OHS behaviours, such as choosing bonus-chasing over safety, stand out in the challenge to institutionalize worker self-regulation in the interests of zero harm, further research is required to establish the extent of consultative, cooperative and collaborative interactions at work. The evidence is clear that when considering implementing the RRDW, workers do not tend to do so without consultation, statistically speaking, first with their supervisors, then with colleagues and then only – in equal measure – with management and their H&S representative, all before approaching their trade union or speaking to any 'other' persons. Deciding whether the RRDW is justified or not is often complex, hence Gray's question as to when a safety refusal actually begins.

Given the spectrum of worker experience and perspectives of workplace refusals, Gray's typology provided a useful framework to consider why the formal expression of the RRDW is not the default position of South African mineworkers and why informal expressions of workplace refusal are commonplace. While this study was not designed to test Gray's typology, viewing the evidence through its lens prompted an interpretation of the gaps in our present understanding of the exercise of the right in South Africa by exposing the hidden aspect of the RRDW, namely that the non-confrontational approach almost certainly outweighs formal and informal confrontation. The application of the typology certainly provides a very useful framework for any future studies of the RRDW on South African mines and reveals new research questions.

Formal confrontation

This study found very high levels of awareness and ample evidence of worker resistance to an unsafe workplace, but which did not find full expression through the formal exercise of the RRDW. Twenty-nine per cent of workers reported a formal experience of the RRDW and over a half (56%) reported having been asked to leave a dangerous workplace by an H&S representative. Thus the formal exercise of the right is very important for workers and worker H&S representatives made an important contribution to this.

However, the formal exercise of the RRDW on large mines faces three impediments. Firstly, the workforce is not homogenous; contract workers were less equipped to make this call. Secondly, workers were inadequately prepared to exercise the formal RRDW, since workers were unable to state the procedure for the RRDW and/or differentiate it from general safety rules and risk management. Moreover, the context for the exercise of the RRDW was found to be predominantly one of safety, and not occupational health. In short, workers had limited understanding of when, and how, the formal exercise of the RRDW had relevance. Thirdly, although the findings showed that workers were more likely to leave a dangerous workplace under the instruction of an H&S representative, workers also reported that representatives were not always able to escalate issues beyond the immediate workplace.

The fairly recent statutory 'Guideline' issued by the MHSI (Department of Mineral Resources, 2016) with respect to the RRDW and implemented in July 2016 was informed by the findings of this study and a desktop review of international legislative experience in Australia, Canada, Europe, and Zambia (Cooper, 2013). The Guideline addresses issues raised in this study and therefore seeks to strengthen the implementation of the formal right, specifically by emphasising the importance of training in relation to the RRDW procedure, and through the promotion of the exercise of the RRDW in relation to OH hazards. Furthermore the Guideline attempts to bridge the difficulties in escalating issues by advising that a workplace H&S representative should escalate a dispute to the full-time H&S representative, who if necessary should be given access to a technical adviser, with the support of management in order to reach a satisfactory resolution. (Annexure 3, RRDW guidance) (Department of Mineral Resources, 2016). Strengthening the direct relationship between workplace and full-time H&S representatives in a procedure may assist the escalation of issues beyond the immediate workplace, although to date, there is no empirical evidence available as to whether H&S representatives utilize the technical advice already available to them under Section 30 MHSA: *Powers and Functions H&S Representatives* (Masilo and Rautenbach, 2010). This study suggested that H&S representatives were unlikely to do this, either because they '*do not have powers*' or are '*not working properly*'.

International studies show that a supportive regulatory environment fortifies arrangements for worker self-regulation (James and Walters, 2002; Weil, 2007) and globally, neo-liberalism is accredited with an increase of management dominance over the arrangements for worker representation (James and Walters, 2002; Johnstone, Quinlan, and Walters, 2005). One reason for this is the rise of behaviour-based OHS management systems that emphasise worker compliance with mine standards and procedure rather than consultation with autonomous worker representatives (Gunningham and Sinclair, 2009; Quinlan, 2014; Walters *et al.*, 2016). A contention with the present MHSI guidance is that there is an

undercurrent of management perspectives on the RRDW. The technical adviser, if appointed, assists both worker representatives and the employer to reach a decision in relation to a workplace where the RRDW has been exercised. However, in the event of this failing, then '*the employer must make a final decision on all issues on which there is disagreement after consultation with such technical advisor*.' (Annexure 3, RRDW Guidance) (Department of Mineral Resources, 2016) (paragraph 4.5). There is no recommendation that the H&S representative requests support from the MHSI, although Section 30 (MHSA Powers and Functions H&S Representatives) states that a representative can contact the Inspectorate and request an inspection. Without a shared commitment by all tripartite stakeholders to the RRDW as a critical component of worker self-regulation, the RRDW comes into sharp focus as the last control in the event of the risk management process failing. The manager who issued a card to 'demand' that workers exercise RRDW crossed a thin line, because the RRDW is not part of the employer arsenal for risk management. A management perspective on the RRDW, as opposed to that of an empowered and autonomous worker, confident of his or her rights, was reflected in the voice of the worker who commented that the exercise of the RRDW is often a case of an impossible choice, getting '*in[to] trouble*' (with management) when instituting the right by slowing the production process, or being 'at fault' (with management and taking the blame for being in a dangerous workplace) in the event of a subsequent accident.

To avoid this criticism, management must consistently act in support of a worker who exercises the right, and make the '*demand*' that supervisors respect worker withdrawal from the workplace and provide support to workplace H&S representatives who wish to escalate an issue beyond the immediate workplace. Without adequate regulatory monitoring, as the data shows, management has stressed that workers need to exercise the RRDW. The RRDW is potentially compromised by this irony – this being that management and not labour representatives are pushing for, educating, and encouraging workers to exercise the RRDW. Under the present global regime of increased individualism and responsibility in OHS discourse (Gray, 2009), the question has already been raised in the South African context of workers being blamed for not having refused dangerous work.

> '*Might a worker be in breach of safety legislation in the event that they do* ***not*** *[emphasis in original] refuse to leave and continue to work in a dangerous place, and consequently be blamed*?' (Stewart, 2017, p. 265).

Informal confrontation

In keeping with the Canadian study (Gray, 2002) the qualitative data revealed stories of '*informal confrontation*' that arose as workers responded to and resisted dangerous working conditions. This is an important finding as it confirmed that regular expressions of worker resistance to a dangerous workplace were occurring on South African mines, although this did not find expression and resolution in the formal exercise of the RRDW as intended in the legislation. Contextual factors such as incentivized production targets, working in a production team, peer pressure, supervisor threats, and fear of repercussions and loss of earnings were all obstacles to the implementation of the formal right. Resistance to dangerous work was then resolved informally through peer pressure and/or supervisory coercion, resulting in capitulation by those workers who initiated, but failed to exercise, the RRDW – or who had their fears downplayed. Nearly one-third of workers who personally had experience of a workplace too dangerous for work continued to work there. The finding suggests that further studies should investigate informal, as well as formal, expressions of resistance to a dangerous workplace. Such a study would provide a more accurate measure of non-compliance with the RRDW. Given the dominant narrative of workers in the qualitative research, '*informal*' rather than '*formal*' confrontation may in fact be more commonplace.

Non-confrontational approaches

Gray suggested that the RRDW should be re-conceptualized to embrace a range of administrative and organizational procedures. Informal, non-confrontational approaches to addressing an unsafe workplace were not a specific focus of this study. Neither did workers spontaneously offer in discussions any other mechanisms they used to alert management to a dangerous workplace. A union representative suggested that only in the event of a safety incident will workers admit to their prior safety concerns. There is then scope for the '*private safety refusals*' and avoidance strategies described by Gray, as workers are certainly aware of problems but sometimes remain silent, which warrants further investigation. The more interesting finding, however, was that the highest proportion of workers addressed their concerns regarding a dangerous workplace to their supervisors, before even their colleagues, their H&S representative, or trade union. This indicates a very significant change in the OHS culture and climate in the South African mining industry given its difficult past. It is arguably within this normal, yet hidden, arena of routine day-to-day active consultation and collaboration at work and actual practice that models of optimal social relations and OHS compliance in the workplace may be discerned. A more mature OHS culture could be expected to support a decrease in informal confrontation and an increase in the formal exercising of the RRDW – predicated on a broader base of non-confrontational collaboration in the workplace.

Conclusion

In the event of a dangerous workplace, the evidence is that workers do voice their concerns often with supervisors. This suggests there is considerable consultation and co-operation regarding unsafe working conditions outside the exercise of the RRDW. The formal exercise of the RRDW on South African mines is not yet the default position of individual workers when faced with a dangerous workplace. Workers report they are more likely to have been asked to leave a dangerous workplace by an H&S representative than to make this call for themselves. Contract workers are the least likely to make this call.

The RRDW is a worker imperative and underpins worker self-regulation. The Guideline issued by the MHSI with respect to the RRDW only partially addresses the

shortcomings found in this research. For the future, of specific concern is whether worker-elected H&S representatives can escalate OHS issues related to the RRDW to full-time H&S representatives, and whether a dispute resolution mechanism reliant on technical advisors appointed with the support of the employer can effectively support workers in realizing their right to a safe and healthy workplace. Arrangements for OHS self-regulation by workers are vulnerable to management perspectives in the absence of a strong regulatory environment from the MHSI. Yet legislation alone is no guarantee of enhanced worker safety. In what appears to be the predominant practice of consultation in the immediate workplace, much non-confrontational collaboration and cooperation takes place at the lowest level. It is surely here where new answers to health and safety in mining by cooperating autonomous individuals are to be found.

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