

Emergence of psychosocial considerations for improving safety in the New Zealand forest industry

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Abstract

There is a growing body of evidence that psychosocial factors have a significant impact on the mental and physical health of workers through increasing stress, depression and anxiety. However, psychosocial factors may also directly influence workplace behaviours to the point where unsafe acts may result. This paper presents an overview of a contemporary understanding of psychosocial influences, by exploring their meaning and development and as they relate to New Zealand forest industry safety. Also presented is how psychosocial considerations have been integrated into health and safety laws over time. Although this paper concludes that our pragmatic understanding of psychosocial influences on workplace behaviour is a relatively recent phenomenon, it also shows that the Person Conducting a Business or Undertaking (PCBU) has legal responsibility for the health and safety impact of worker behaviours and therefore may need to concern themselves with psychosocial influences.

Introduction

As many as 95% of workplace injuries involve something an individual has done alongside technology or machine failure (Wilson & Higbee, 2012). In a risk factor analysis of fatal harvesting accidents in Turkey, Melemez (2015) found personal factors to have the highest weight followed by organisational, job-related, equipment and environmental factors. Yet, root cause analysis focuses mostly on identifying organisational or systemic failures at the root of an accident. When human factors are considered, they are often ergonomic or physiological in perspective. The underlying psychosocial causes are often left understated and in the domain of the personal and private. The prevailing perception is that if physical hazards are managed, the risk of injury is minimised as far as is practicable (Leka & Jain, 2010). Within health and safety assessment, consideration of psychosocial factors is largely absent (O'Keeffe & Tuckey, 2014). To a large extent, comprehensive safety systems focused on the use of technology and administrative controls are seen as the solution to keep people safe and accidents are the result of system failure or system inadequacy.

Many businesses in New Zealand developed comprehensive systems after the introduction of the Health and Safety in Employment Act 1992 (HSE Act 1992) and its implementation under the Regulations

and accredited codes of practice by inspectors and insurers. The extrinsic control provided by systems helps achieve compliance and some peace of mind for those responsible for the workplace. In the period 2012 to 2017 there was a 53% reduction in serious harm incidents in the forest industry (Steepland Harvesting Programme, 2018). That reduction has happened alongside the introduction of the Approved Code of Practice for Safety and Health in Forest Operations in 2012 and an increase in the proportion of all harvesting operations using mechanised felling to 55% in 2016 from 23% in 2009 (Steepland Harvesting Programme, 2018). The serious harm injury rate in forestry and logging operations is now below that of industries such as construction and farming (Hutching, 2018; WorkSafe New Zealand, 2019).

Yet the fatality rate in forestry and logging is proving to be a stubborn and distressing statistic. While the increase in mechanised felling operations has removed approximately 213 manual fallers and breaker outs from the workforce (Steepland Harvesting Programme, 2018), the fatality rate is still the highest across all occupational groups in New Zealand (WorkSafe New Zealand, 2018). In addressing the high fatality rate, the Independent Forestry Safety Review (Adams, Armstrong & Cosman, 2014) recognised that no single task or single factor was responsible, and recommended doing the research required to understand both the physical and psychological characteristics of near misses or accidents in order to fully address the causes of the fatality rate. Once some action or behaviour becomes a contributing factor to an accident, understanding what may have contributed to that behaviour has passed beyond the scope of the investigation tools currently being used to define root cause.

Human behaviour is constructed in the psychosocial domain – the outcome of relations between our physical and mental capabilities and our social environments (Woodward, 2015). In this domain, the various factors do not act independent of each other or at a conscious level. Psychological, organisational and environmental factors can interact and amplify each other to create a level of resonance that predisposes the system to failure. A factor that was unlikely to directly influence behaviour in one situation may surge to directly influence behaviour in another, as happens when production pressure and fatigue impacts the assessment of risk by a manual tree faller and something critical to the safe felling of the tree gets missed. In well-developed systemised workplaces the impact of psychosocial

factors on that behavioural variability can be suppressed until their influence resonates enough for an accident to happen where there are more severe consequences (low frequency, high consequence accidents).

Most often a person's unsafe behaviour is conveniently grouped under negligence and placed in the category of the individual's responsibility. Ignoring psychosocial factors makes it difficult to draw a distinction between negligence and behaviour arising naturally through the influence of those factors. Placing the responsibility on the individual comes with the expectation that people should be more careful and not break important safety rules. It ignores the potential to learn how psychosocial influences can result in positive workplace behaviours that may prevent such an occurrence. After all, there are significantly more safe behaviours in New Zealand workplaces than accident causing behaviours. Building capability and capacity for successful work and using systems that recognise the inherent variability in everyday work helps build organisational resilience and is considered the next evolution of safety thinking (Hollnagel, 2014).

Given the potential importance of psychosocial influences to safety in the New Zealand forest industry, the aim of this paper is two-fold:

1. Explore what is understood about psychosocial factors within the context of health and safety legislative development, and
2. Examine what may need to change in the way safety is viewed in the forest industry to take account of the influence of psychosocial factors.

It will do this by reviewing what is meant by safety and then what is meant by psychosocial factors within the context of safety. The place of those psychosocial factors in the New Zealand health and safety legislative framework is reviewed, and suggestions are made as to what may have to change to accommodate the role of psychosocial influences in our approach to safety.

Importance of psychosocial factors in health and safety

There is a growing body of evidence showing the negative consequences of psychosocial pressures on general mental and physical health, and that those consequences impact business through factors such as absenteeism, productivity, job satisfaction and intention to quit (Leka, Van Wassenhove & Jain, 2015). More importantly, the reduction in wellbeing due to exposure to poor psychosocial conditions has been associated with negative safety outcomes. O'Keefe and Tuckey (2014) highlighted research showing psychosocial factors make a major contribution to musculoskeletal injuries. In an eight-year study on 10,062 Finnish forestry workers, burnout (a psychological consequence of prolonged work stress) was associated with an increase in workplace injuries (Ahola, Salminen, Toppinen-Tanner, Koskinen &

Väänänen, 2013). Nahrgang, Morgeson and Hofmann (2011) reported an association between burnout and an increase in risky and dangerous behaviours. This evidence is reflected in the changing way we look at safety and in our legislative framework. However, it is largely absent from the tools we use to manage safety.

Evolving definition of safety

Safety is often defined as the absence of negative events – the absence of harm being experienced by the people engaged in the workplace. Therefore, a safety Key Performance Indicator (KPI) is often to measure the absence of something.

Safety, especially in relation to psychosocial influences, is a dynamic event. Hence it is something that must be created constantly and continuously as a capacity of both the organisation and the people within it. It is complementary to the more traditional avoidance view of safety. Effective performance requires both that people avoid the things that go wrong and ensure that things go right.

The traditional view of regulators and managers is to prevent workers from being exposed to unacceptable hazards. The people most often held responsible for the elimination or substitution of activities are not directly engaged in the actual work (e.g. harvest engineers). Therefore, their awareness is raised only when an unwanted event occurs or is predicted to occur and they do not become overly concerned when observing positive behaviours. Acting on positive events is difficult as things more often go right than wrong. Acting on everything that goes right would likely overload a system or manager.

Hollnagel (2014) suggested things happen basically in the same way, whether the outcome is positive or negative. If the focus is on avoidance, then suppressing the processes leading to things that go wrong will also suppress the processes that lead to things that go right. An unintended consequence of a system focused entirely on controlling behaviour as the means of reducing harm is that the ability of the system to adapt to variability in the psychosocial environment is reduced and the system becomes less resilient.

The differences between the traditional view of safety and this evolving view of safety that makes the psychosocial much more important are captured in Table 1.

Defining psychosocial factors

Academia has tended to define psychosocial factors as a risk, hazard, or health effect. Both the New Zealand Workplace Barometer (Bentley et al., 2019) and the World Health Organisation (Leka & Jain, 2010) use the following definition of psychosocial hazards:

'... those aspects of work design and the organisation and management of work, and their social and environmental contexts, which have the potential for causing psychosocial or physical harm.'

Cox, Griffiths & Randall (2003, 195)

Table 1: Comparisons of two ways of thinking about safety (modified from Hollnagel, 2014)

Two views of safety	Traditional	Focus on things that go right (Safety II)
Definition of safety	As few things as possible go wrong	As many things as possible go right
Safety management principle	Reactive, respond when something happens, or is categorised as an unacceptable risk	Proactive, continuously trying to anticipate developments and events
Explanations of accidents	Accidents are caused by failures and malfunctions. The purpose of an investigation is to identify causes and contributory factors	Things basically happen in the same way regardless of the outcome. The purpose of an investigation is to understand how things usually go right
Attitude to the human factor	Humans are predominantly seen as a liability or a hazard	Humans are seen as a resource necessary for system flexibility and resilience
Role of performance variability	Harmful, should be prevented as far as possible	Inevitable but also useful. Should be monitored and managed

Based on this definition, psychosocial hazards within the workplace have been summarised within 10 domains (Table 2).

What this definition ignores, however, is that the psychological consequences of exposure to psychosocial conditions goes with the person as they traverse the various social settings (work, family, community) they occupy within their daily lives. In a study of the psychosocial factors potentially impacting New Zealand forestry workers, Lovelock and Houghton (2017) found that many live in challenging social environments. All respondents drew attention to issues such as poverty, intergenerational drug use in the community, insufficient support for young forestry workers at home and in the community, poor housing, crowded houses and poor nutrition. Many workers engaged in forestry also have a high exposure to extreme violence in their social environment. The issues raised above will impact on their ability to be safe and healthy within their workplaces.

Place of psychosocial factors within a health and safety framework

Prior to 1992, New Zealand’s approach to health and safety legislation developed in response to specific concerns and was targeted solely at the workplaces in which those issues arose. While some of those concerns did address psychosocial factors within the workplace (length of the working day and working week), they reflected organised labour’s experience of the Industrial Revolution, i.e. exploitation (sweating) of labour, particularly those considered vulnerable (women and children) and the risk of economic impoverishment due

to the death or maiming of the primary breadwinner. The first pieces of workplace legislation, such as the Employment of Females Act 1873, the Regulation of Mines Act 1874 and the Employers’ Liability Act 1882, were an extension of the Government’s responsibility to protect citizens from harm.

Early safety theorists (e.g. Greenwood & Woods, 1919) saw accidents as the result of human error. To ensure citizens did not come to harm the Government identified specific sources of harm and imposed legislation and regulations to provide rules around the activity. The Government established an inspectorate within the Department of Labour to ensure the rules were followed (e.g. the Bush Workers Act 1945 that included the establishment of Bush Inspectors). The regulatory and industry response to the psychosocial hazards and influences on health and safety remained narrow, focusing on harassment, occupational violence and work stress. Workplace records by inspectorates reveal psychosocial hazards to be a marginal area of inspectorate activity (Johnstone, Quinlan & McNamara, 2011).

In 1970, the British Government, in response to rising accident rates, concluded that the prescriptive legislative approach needed to give way to a sharing of responsibility between government, employers and workers. The belief was that only by employers and workers taking responsibility would the improvements to the social environment required to reduce accident rates be achieved. The report, headed by Lord Alfred Robens and published in 1972, laid the philosophical groundwork for occupational health and safety management throughout the Commonwealth. Its tripartite approach is an

important structural principle for moderating negative influences of psychosocial factors.

Faced with accident rates that were significantly higher than both Australia and the US, despite 14 major Acts, 17 minor Acts and over 50 Regulations pertaining to occupational safety in force (Wren, 2002), New Zealand introduced the Health and Safety in Employment Bill into the House in 1991. For all intents and purposes, the new Act (HSE Act 1992) was based on the Robens Report, and was comprehensive (covering all workplaces) and an attempt to share responsibilities between government, employers and employees.

However, despite a definition of hazard within the HSE Act 1992 that included the potential of psychosocial factors to be a hazard, the focus of those with regulatory authority on ‘taking all practicable steps’ marginalised psychosocial influences as a source of accidents. Faced with the prospect of large fines, prosecutions targeting organisations rather than individuals and the offer of reduced levies for workplace injury compensation from the Accident Compensation Commission, employers focused on developing extensive safety systems that would ensure all practicable steps were taken. The principal assumption for system development was all accidents are preventable and therefore all accidents

can be avoided. Furthermore, the emphasis on ‘current state of knowledge’ in the definition of ‘all practicable steps’ did not allow for much consideration of human or situational variability arising from influences that might sit below the level of immediate conscious awareness of either the human or the situation.

The 2002 amendment to the HSE Act 1992 incorporated extensive additional provisions for good faith cooperation between employers and employees about health and safety. In doing so the amendment sought to correct the deficiencies in the principal Act and build a more balanced tripartite approach. The amendment also strengthened the requirements around the areas of psychosocial factors by confirming that certain temporary conditions may cause a person’s behaviour to be hazardous, and included provisions confirming that harm can be caused by work-related stress. That emphasis, however, translated only into concern about chronic occupational health issues and not about the potential role of psychosocial factors in accidents. In the 13 technical reports provided to the Minister of Labour by the National Occupational Health and Safety Advisory Committee between 2004 and 2009 the only mention of psychosocial factors is about health affects, with no mention of the impact on accidents.

Table 2: Psychosocial hazards summarised within 10 domains (Leka & Jain, 2010)

Job content	Lack of variety or short work cycles, fragmented or meaningless work, under-use of skills, high uncertainty, continuous exposure to people through work
Workload & work pace	Work overload or underload, machine pacing, high levels of time pressure, continually subject to deadlines
Work schedule	Shift working, night shifts, inflexible work schedules, unpredictable hours, long or unsociable hours
Control	Low participation in decision-making, lack of control over workload, pacing, etc
Environment & equipment	Inadequate equipment availability, suitability or maintenance; poor environmental conditions such as lack of space, poor lighting, excessive noise
Organisational culture & function	Poor communication, low levels of support for problem-solving and personal development, lack of definition of (or agreement on) organisational objectives
Interpersonal relationships at work	Social or physical isolation, poor relationships with superiors, interpersonal conflict, lack of social support, bullying, harassment
Role in organisation	Role ambiguity, role conflict and responsibility for people
Career development	Career stagnation and uncertainty, under-promotion or over-promotion, poor pay, job insecurity, low social value to work
Home-work interface	Conflicting demands of work and home, low support at home, dual career problems

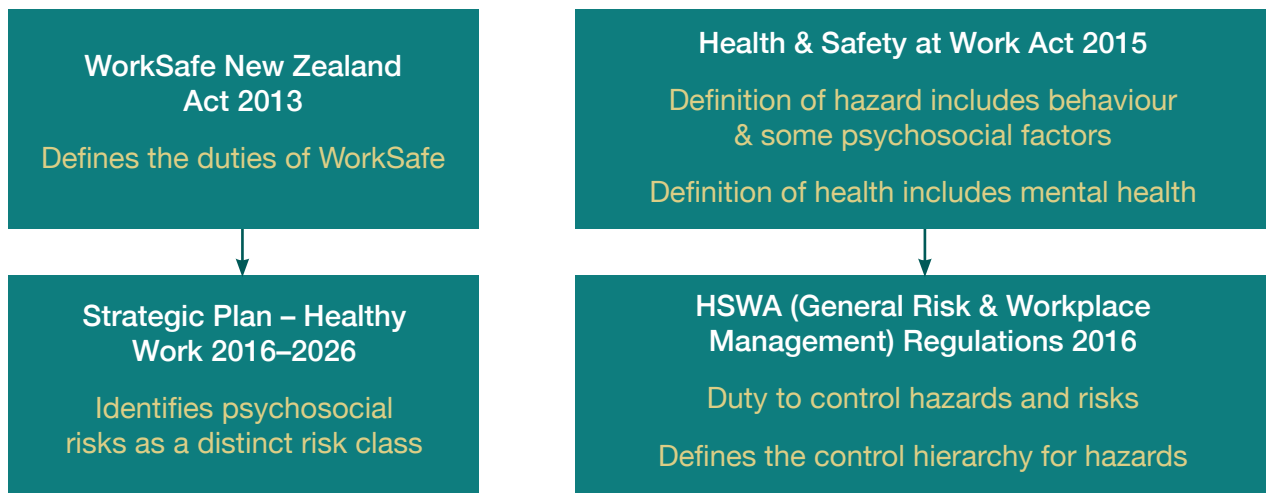


Figure 1: Current legal requirements to consider psychosocial factors

The Pike River tragedy provoked another review of the legislative framework. Both the subsequent Royal Commission in 2012 and the Independent Taskforce on Workplace Health and Safety (Jager et al., 2013) concluded that the HSE Act 1992 and the Health and Safety in Employment Amendment Act 2002 (HSEA Act 2002) represented a poor implementation of the Robens model. Specifically, they were critical of the extent to which the development of regulations, codes of practice and guidance material had involved both employers and employees and of the failure to establish a tripartite body charged with overseeing the framework’s implementation. As a result, New Zealand’s work health and safety system underwent its most significant reforms since the HSE 1992, with the establishment of Worksafe New Zealand and the Health and Safety at Work Act 2015 (HSWA 2015), which came into effect on 4 April 2016.

Principal changes to the framework included clarifying responsibilities through the introduction of the Person Conducting a Business or Undertaking (PCBU) having the primary duty of care, an increased level of expectation around worker involvement in the development and management of the safety system, changing the focus from hazard to risk, and defining health as meaning both physical and mental health. By specifically referencing mental health, the HSWA 2015 clarifies that psychosocial factors are principally characterised as a type of hazard. This can be confusing when developing moderators and interventions for psychosocial factors.

The current legislative framework (see Figure 1) requires those responsible to act if there is a risk of harm to the extent that is reasonably practicable. Grouping psychosocial factors under hazards and risks can be misleading to the management of those factors, as the factors are often influencers and may not directly cause significant loss but can influence this loss in unexpected and unanticipated ways. An example is stress. Stress can be a reaction rather than a predetermined state, although there are likely to be pre-determined events that lead to a significant stress reaction that could just as likely be deeply personal and originate from outside the workplace.

Recent work by Worksafe New Zealand moves the focus of psychosocial factors from a hazard to a risk on health. The report on psychosocial hazards in work environments (Lovelock, 2019) provides some guidance on approaches for managing those factors. Of relevance for the forest industry is that there are a range of upstream determinants on psychosocial factors operating in a workplace. These determinants include economic conditions and the nature of contractual arrangements impacting worker employment, as well as that the impacts of those factors experienced in the workplace can extend to other specific settings (such as home and community) and vice versa.

However, apart from noting that accidents can arise as a result of job strain and bullying, both relevant to the forest industry (Bentley et al., 2019), the focus of the report is on the impact of psychosocial factors on health. That reflects the place of psychosocial factors in Worksafe New Zealand’s strategic planning where harm from accidents is covered in a shorter-term plan (Harm Reduction Action Plan), and the longer-term plan (Strategic Plan for Work-related Health 2016–2026) covers harm to health from exposures at work. The 10-year plan identifies psychosocial factors as a type of hazard, as distinct from biological, physical, chemical and ergonomic risks (see Figure 2). This separation of harm from accidents and harm to health from exposures risks hiding the relationship between psychosocial factors as an influence over the risk of accidents.

Dealing with psychosocial factors in forestry

The impact psychosocial influences have on workplace behaviours can be moderated by more rigorous engineering controls, particularly by effective isolation measures. However, where those controls are still reliant on a worker following a set of procedures (e.g. lock out or isolation through the imposition of a ‘keep clear’ minimum distance), they can be rendered ineffective by a combination of factors, including decision-making under conditions of psychosocial duress. In a hazardous environment, that variability can have dire consequences.

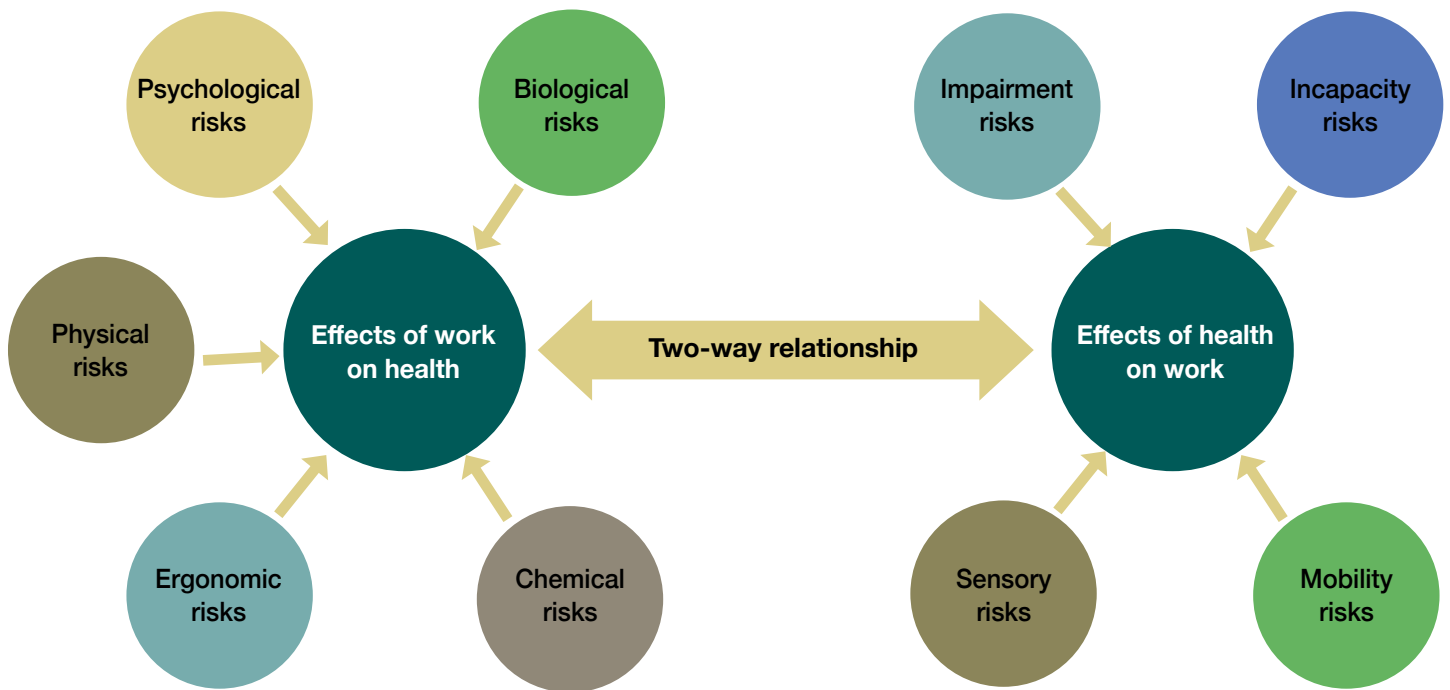


Figure 2: What Worksafe New Zealand means by work-related health and the influence of psychosocial factors. Source: WorkSafe New Zealand (2016)

The Health and Safety at Work (General Risk and Workplace Management) Regulations 2016 provide the current model of the hierarchy of control measures (see Figure 3). The hierarchy of control measures applies if it is not reasonably practicable for a PCBU to eliminate risks to health and safety:

‘(3) The PCBU must minimise risks to health and safety, so far as is reasonably practicable, by taking one or more of the following actions that is the most appropriate and effective taking into account the nature of the risk: (a) substituting (wholly or partly) the hazard giving rise to the risk with something that gives rise to a lesser risk: (b) isolating the hazard giving rise to the risk to prevent any person coming into contact with it: (c) implementing engineering controls. (4) If a risk then remains, the PCBU must minimise the remaining risk, so far as is reasonably practicable, by implementing administrative controls. (5) If a risk then remains, the PCBU must minimise the remaining risk by ensuring the provision and use of suitable personal protective equipment.’

Health and Safety at Work (General Risk and Workplace Management) Regulations 2016, 7

The Health and Safety at Work (General Risk and Workplace Management) Regulations 2016 define the controls as distinct strategies when in reality there is a high degree of cross-over between them. The controls are often implemented in groupings of two or more strategies. An example is guarding on machinery. This engineering control isolates people from the moving parts, but administration controls are often also necessary to control who and under what conditions the guard be removed. The intervention strategies are not fully effective in another dimension and can be

implemented with varying degrees of strength. For instance, in a sawmill, the isolation strategy covers everything from a padlocked electrical switch in a Motor Control Centre room to a fully interlocked fenced gate system with mechanical and electrical isolation devices.

In situations where strong isolation strategies are not considered practicable, psychosocial factors will have a greater influence on workplace behaviour. The influence of psychosocial factors on workplace behaviour is also greater when the control strategy implemented is weaker. The forest is a variable environment with multiple hazards expressed in a way that is difficult to isolate and control. Forest activities are often typically carried out in high consequence high hazard exposure

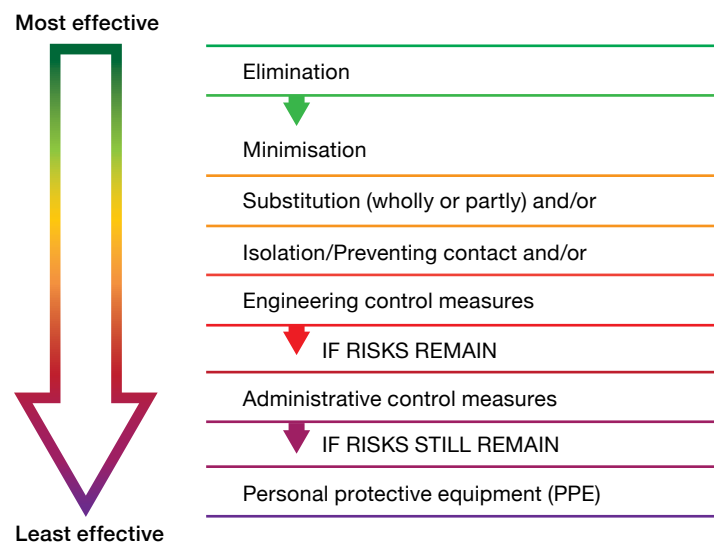


Figure 3: The cross-over of the hierarchy of controls. Source: WorkSafe New Zealand (2017)

situations. Consider simply walking underneath a near mature pine plantation with numerous dead branches suspended at height (see Figure 4). Even a slight breeze can cause branches to dislodge and fall to the ground. If these aerial hazards existed inside the limited space of a factory, the expectation is people would be fully isolated from such a hazard.

Johannesen, Sarter, Cook, Dekker and Woods (2012) believe there is a common notion that safe systems need protection from unreliable, erratic human beings (who get tired, irritable, distracted, do not communicate well, and have all kinds of problems with perception, information processing, memory and recall). Eliminating human error becomes the target of more rigid rules, tighter monitoring of other people, more automation and computer technology, all to standardise practices. Ironically, such efforts have unintended consequences that make controls more brittle and hide the sources of resilience that make systems work despite complications, gaps, bottlenecks, goal conflicts and complexity (Johannesen et al., 2012).

An example is if controls have been placed on the manual choker setting for a yarder, with escalating isolation controls for classified zones. Psychosocial influences can influence this implementation in several ways – production pressure, the extent of the team or individual involvement, who and how many are involved in the application of the control zones, risk level recognition and team culture. All these psychosocial influences can influence the extent of implementation of controls in a high consequence situation, both positively and negatively.

The nature of accidents is changing with increasing complexity in technology and social systems. An increasing number of accidents defy explanations in simple terms such as in cause-effect chains or human

error. The domino theory was first proposed in 1931 (Slappendel, 1995). The original domino model had five dominos: any injury (fifth domino) is caused by an accident (fourth domino); the accident in turn is caused by unsafe acts of a person or unsafe conditions (third domino); and the conditions are preceded by the fault of a person (second domino) and ancestry and social environment (first domino) (Seo, 2005). The pioneer Heinrich also used the now widely-used terms of unsafe act and unsafe condition. Two sources of psychosocial causes were considered in the theory, being ancestry and the social environment. Unsafe acts and personal fault could also be argued to highlight human behaviour. Heinrich reported his discovery from case studies of 75,000 accident records that 88% of all industrial accidents were caused primarily by unsafe acts of persons (Seo, 2005).

Undoubtedly the most popular modern accident causation model, the Swiss Cheese model (see Figure 5), has been widely used across a wide range of industries (Underwood & Waterson, 2014). When applied retrospectively to accidents, it often highlights linear pathways from effect to root causes that do not recognise the importance of the parallel influences of psychosocial influences.

Contemporary forest industry thinking

The SafeTree Safety Culture model developed by the Forest Industry Safety Council (FISC) is an excellent example of contemporary thinking on safety in forestry in New Zealand (see Figure 6). Significant resources have been put into this model, leaning on the collective experiences of a number of forest and safety industry experts. FISC is supported by Worksafe New Zealand and is incorporated into their Injury Prevention Action Plan, which Worksafe New Zealand



Figure 4: Suspended dead branches are relatively common in some stands

has a legislative requirement to produce. The SafeTree tool has been designed to create a safe, productive and resilient workplace culture as this is important to drive positive behaviours and practices at work (Ewing, 2017). Elements identified in the SafeTree model incorporate significant psychosocial influences, specifically: work pressure; risk taking; relationships; recognition; and worker engagement. It is a workplace cultural model incorporating many of the elements identified in the Robens model, most significantly employee engagement.

The SafeTree model falls short of identifying psychosocial factors as a risk factor that needs to be accounted for during hazard mitigation. Although social factors are visible on the worksite and many crew managers have to deal with the downside consequences of them (Lovelock & Houghton, 2017), they are not mentioned in the model.

The link between psychosocial influences and behaviour is well established in academic literature, but the pathway of external social influences into the workplace is less defined. A valid working pathway theory can help understand the nature of psychosocial influences and therefore what moderators may prove effective. Without such a theory, workplace safety interventions are likely to fall short of their potential effectiveness and accidents will continue despite the significant investment in safety systems (Hollnagel, 2012).

At first glance, the Pathway model appears to be a simple structural representation (Figure 7). It helps explain how things happen, but not the why. The model tells us more than that; it is part of being human to have workplace behaviours influenced by emotional memories.

Most significantly, these behaviours are driven by non-conscious as well as conscious influences. Individuals react differently to a set of workplace stimuli and they may not even be aware of why, and this has profound implications on safety in the workplace, especially for high hazard situations. Any moderating interventions that rely on the human element across a number of people will have to account for non-conscious behaviour deviation.

A significant contribution of the Pathway model is the temporal elements it identifies. Social influences may originate from an individual's past, even their childhood and experiences during their upbringing. These emotional memories remain below the observable threshold for most workplace situations, buried within the individual.

Classifying psychosocial factors as a hazard has an underlying assumption that it is practicable to identify them ahead of time. The Pathway model shows psychosocial factors are often undetected and unpredictable without the most complex of models. Environments are fluid and variation can change the way the factor influences workplace behaviours. Real effects can emerge from time-to-time through the resonance of multiple factors not fully explained through linear models.

Conclusion

This paper presents a contemporary understanding of psychosocial effects in terms of meaning for the forest industry, as well as its establishment within New Zealand's health and safety laws. However, it recognises that a well-defined process remains absent for its implementation and there remains a need for research into the human factor of psychosocial influences to incorporate these into the contemporary accident avoidance models in forestry.

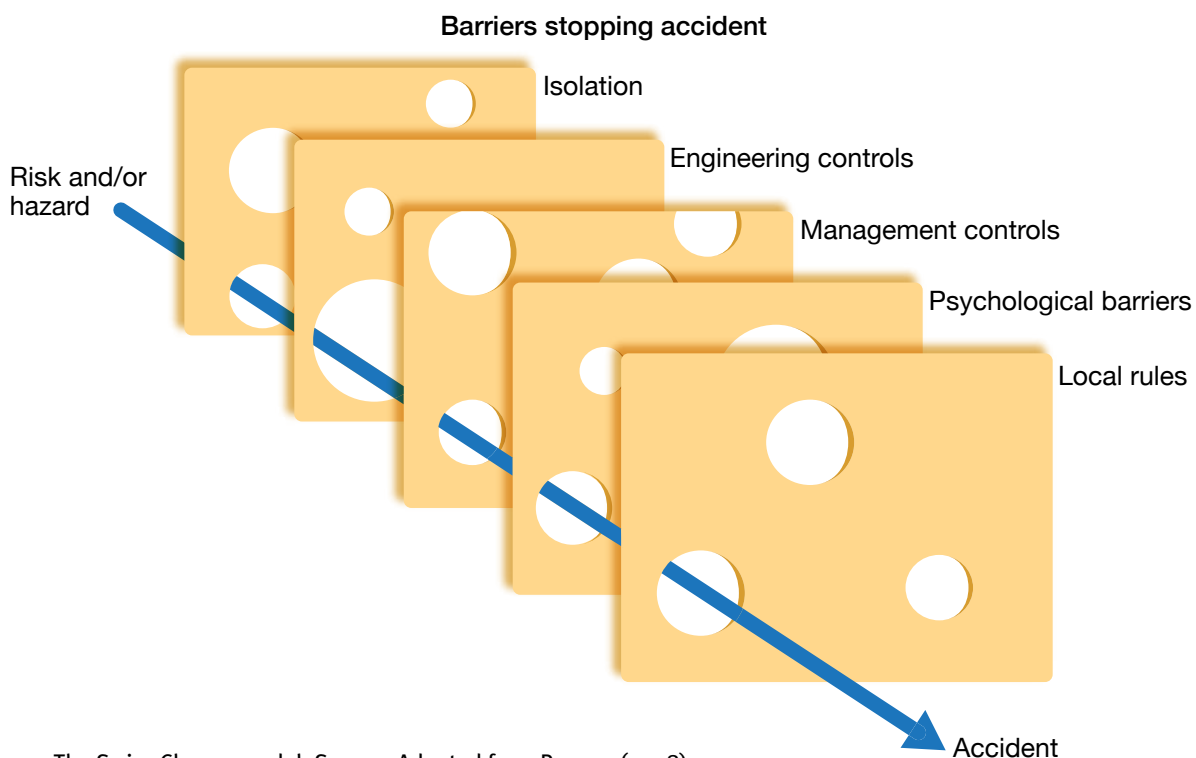


Figure 5: The Swiss Cheese model. Source: Adapted from Reason (2008)

GROWING OUR SAFETY CULTURE

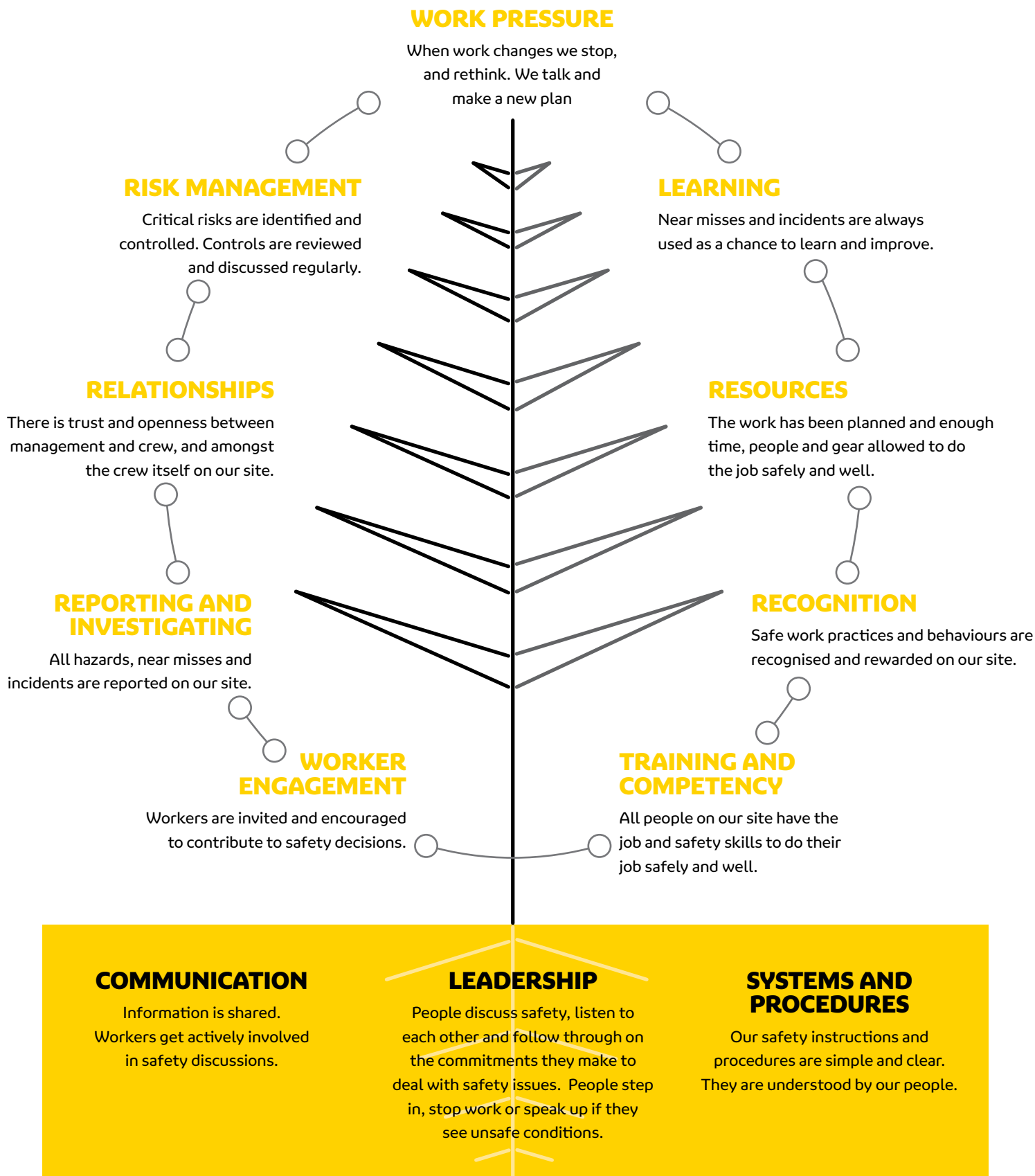


Figure 6: SafeTree's Safety Culture Framework. Source: SafeTree (2017)

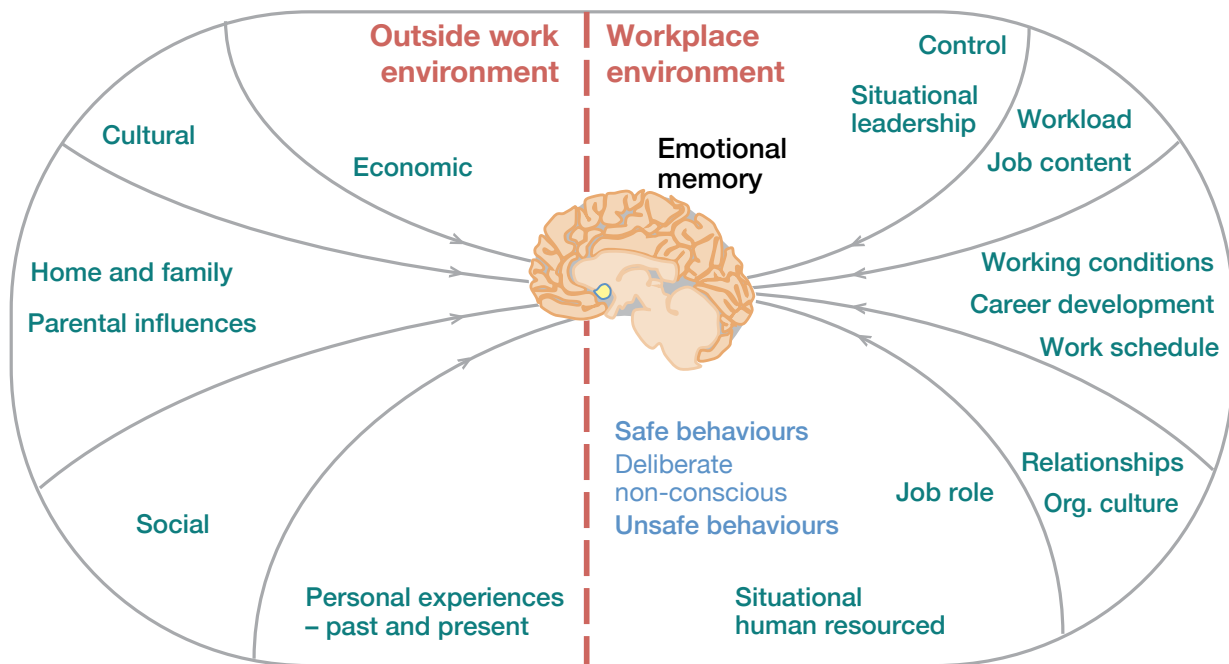


Figure 7: The Pathway model – the interrelation of social factors and workplace behaviour

The assumption of cause-effect underlies a lot of modern safety intervention strategies. In the case of psychosocial factors, determining the root cause can be a very difficult thing to achieve without significant input from psychologists and sociologists at an individual level. This work is not practicable with large groupings of the workforce. The nature of cause-effect may hold in retrospect, but its use as a predictive tool to protect workers in the future is limited.

Instead, a change of thinking is required. While some psychosocial influences can be isolated and treated in a classical sense, such as fatigue and stress, others are less obvious and therefore less obviously moderated. When considering interventions for a critical risk the question should be asked: ‘Can psychosocial factors influence the way people will behave to such an extent that it overcomes the effectiveness of the intervention?’ Second generation safety theorists focused on human error – ‘to err is human’. Humans are naturally different. Their workplace behaviours are variable, leading to a summary more like – ‘to vary is human’. Safety interventions in critical risk situations need to account for this variability.

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