The Implications of Pre-Work Safety Expectations for Workplace Accident Prevention.

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1.1 Abstract

Young workers are overrepresented in workplace accidents. The aim of this study was to provide the first research exploration of relatively inexperienced neophyte's pre-work safety expectations, and their associations with expected risk and expected trust. A model of neophyte safety expectations was developed and tested linking accident exposure and work exposure to safety expectations, expectations of trust (in both co-workers and management) and expectations of risk. Results provided partial support for the model, suggesting that neophytes enter work with inflated safety expectations that do not match the reality of the job, and revealed marked gender differences in safety expectations. Implications and future recommendations are discussed.

2.1 Introduction and Rationale

Occupational health and safety is a key issue for industrial-organisational research. In New Zealand, in 2008 alone, the accident compensation corporation received 117 work-related injury claims per 1,000 full-time equivalent employees (FTEs: StatsNZ, 2009). Most health and safety programs in the workplace focus on the elimination of workplace hazards, but research indicates only a small proportion of reported accidents are attributable to mechanical or physical hazards, so these interventions have limited utility in preventing accidents and injuries in the workplace (Boden, Hall, Levenstein & Punnett, 1984; Cooke & Gautschi, 1981).

Recent research has explored other factors such as safety perceptions and attitudes in an attempt to understand safety climate and culture in the workplace (Williamson, Feyer, Cairns & Biancotti, 1997). However, relatively little attention has been given to individual's expectations surrounding safety before they enter the workforce. Further, it appears that no attention has been given to preconceived expectations of risk formed before a newcomer enters a job role. As such, the aim of this thesis was to develop and investigate a model of safety and risk expectations surrounding work for individuals that have not yet entered full time work (such as high-school students – hereafter referred to as neophytes), and the factors that influence these expectations.

Risk-taking orientation and accident incidence

Westaby and Lowe (2005) suggest that the level of risk a young employee faces on the job may be explained by an individual's risk-taking orientation (the willingness of

an employee to engage in dangerous acts on the job). This finding is supported by research from Parker, Stradling and Manstead (1996) which found that an individual's willingness to perform dangerous acts was related to workplace accidents, even after controlling for accident history, age and gender. As such, we would expect that neophytes who express willingness to take risks on the job may be more at risk of accident or injury on the job. The finding that risk-taking orientation is related to workplace accidents provides an important rationale for the exploration of the factors that influence, and are influenced by neophyte safety expectations.

Safety expectations defined

Safety expectations are defined as the extent to which an individual expects a job characteristic relating to safety will be present– such as an expectation of how much management will look after a newcomer's safety (Nelson & Sutton, 1991). Safety expectations are differentiated from safety perceptions by the level of direct job experience the individual has received. For example, a neophyte who has relatively little experience with a job is likely to still have expectations about safety in that job, but not safety perceptions as they have never been present at the job. A proposed model of neophyte safety expectations is presented in Figure 1. The model is explained in the following sections.

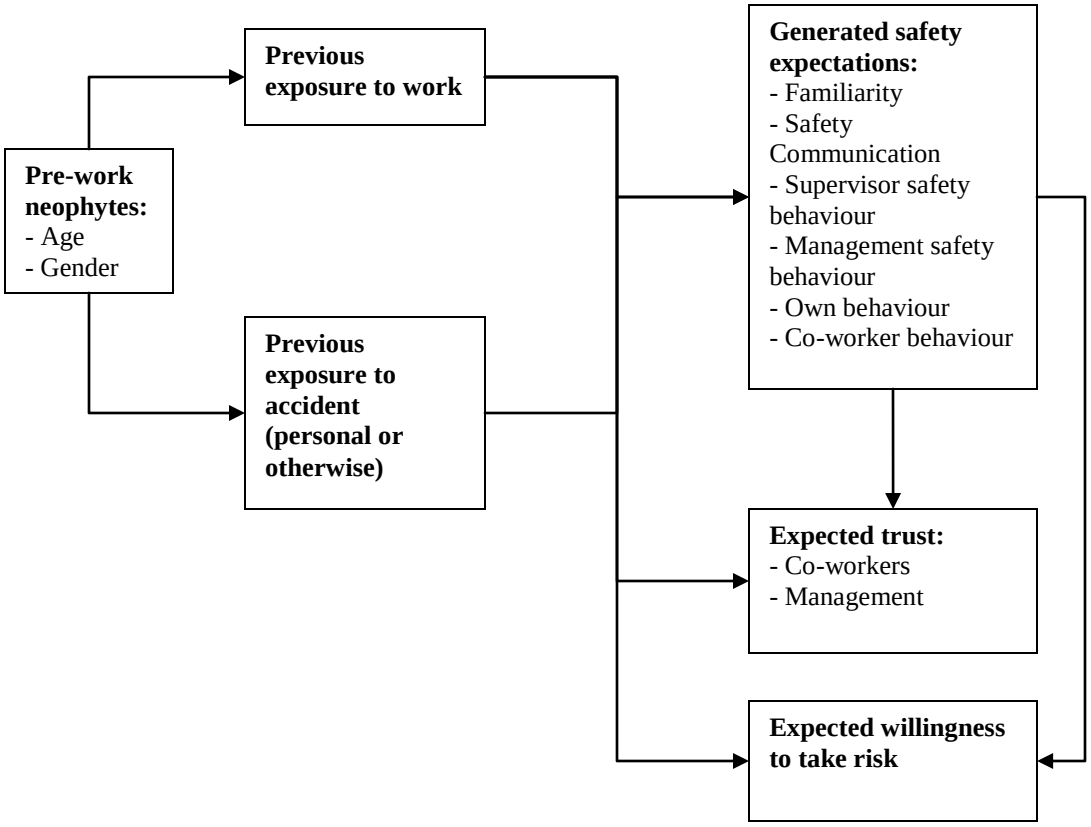

Figure 1: Proposed model of neophyte safety expectations

2.11 Development of the model

Characteristics of pre-work neophytes

The first part of the model concerns the likely demographic characteristics of pre-work neophytes and how these relate to accident and injury rates in the workplace.

Gender and age differences in accident incidence rates

Few studies have measured the incidence of occupational injuries among young workers (Underhill, 2003). However, Mayhew (2000) presents Western Australian data showing that workers aged 15-24 accounted for 27% of time-lost injuries on the job in

the mid 1990's even though they accounted for only 21% of the workforce. Injury statistics for young workers in New Zealand show that workers aged 15-24 years of age have the second highest rate of injury out of any age group, with 143 claims per 1,000 FTEs. Older workers 65+ years of age have the highest rate of injury per 1,000 FTEs (StatsNZ, 2009).

Workplace statistics also reveal some concerning gender differences in accident rates for young workers. In New Zealand, in 2008 alone, the accident compensation corporation received 82 work-related injury claims per 1,000 female FTEs, and 193 work-related injury claims per 1,000 male FTEs aged 15-24 (StatsNZ, 2009). This finding that males experience significantly higher rates of workplace accident than females remains consistent at all age levels (StatsNZ, 2009). These gender differences could occur for a number of different reasons. It is likely that at least some of the difference is accounted for by the higher number of males that find employment in high risk industries like forestry and agriculture which would put them at higher risk of a time-lost workplace accident (StatsNZ, 2009).

Another alternative possibility is that males, particularly at young ages, have different safety expectations and attitudes towards risk than females do, which may manifest in more risk-taking behaviour on the job, leading to higher injury rates for males. The current study will examine these pre-start safety expectations for young neophytes and investigate possible gender differences relating to these.

Pre-start safety expectations surrounding work

The second part of the model concerns factors that may influence pre-start safety expectations generated by neophytes before they enter work, and how these expectations relate to an individual's expected willingness to take risks.

Previous exposure to work and inflated safety expectations

One factor that may explain the observed higher injury rates for younger workers regardless of gender is that younger workers are inevitably less experienced than older workers and are consistently found to have not received adequate safety training at work (Underhill, 2003). Buckley, Fedor, Veres, Wiese and Carrahar (1998) report that newcomers to a job typically initially display unrealistically high expectations about the nature of a job, resulting in a mismatch between individual expectations and what the job is realistically like. However, it should be noted that this research did not focus on safety expectations instead having a much broader focus around other work related expectations. Attribution research suggests that these mismatches of expectation with reality may be because observers (the neophyte) and actors (experienced workers) commonly make significantly different judgements about workplace challenges, with observers demonstrating a tendency to minimise or ignore situational constraints (Cunningham, Starr & Kanouse, 1979; Martin & Nivens, 1987).

Additional support for this finding is provided by research based on social learning theory (Bandura, 1977). Fazio and Zanna (1981) make the suggestion that information received by others is less effective when forming expectations of self-

efficacy than is actual experience. This simply indicates that neophytes who have not actually worked in a given job before are likely to have more inaccurate expectations concerning the job than those who have.

These findings indicate that neophytes with relatively little knowledge or experience in a job may see the work situation as less problematic than those who are actually doing the work. Buckley et al. (1998) report that for relatively inexperienced individuals about to enter a job, this may result in expectations that significantly differ from the challenges faced on the job. Although Buckley et al. (1998) focus on general expectations that newcomers may have surrounding work, it is likely that this finding would also extend to neophyte expectations surrounding facets of safety (such as neophyte expectations of how safely their co-workers will behave).

Safety risks resulting from inflated expectations

Situations where expectations are tested and not met are termed 'reality shock', as neophytes entering a job must adjust their inflated and unrealistic pre-work expectations to the reality of the job (Dugoni & Ilgen, 1981). Wanous (1989) suggests that unmet expectations account for an extra 28.8% of workplace turnover above normal rates. Turnover poses significant problems for high-risk industries – lost employees must be replaced and as studies suggest accidents are more common in initial periods of employment this means that inflated and unmet expectations may result in a cycle of new inexperienced employees that have greater risk of being involved in an accident (Cellier, Eyrolle & Bertrand, 1995).

The unpleasant reality of this finding is demonstrated by a study from Bentley, Parker, Ashby, Moore and Tappin (2002) which reports that 44% of injuries on logging skid sites occur within the workers' first year on the job with 32% of those occurring within the first 6 months of employment. Burt and Stevenson (2009) suggest that this finding may not just indicate that new workers are more at risk when they first start a job, but also that they may pose a significant risk to those they work with.

The finding that neophytes are more at risk and take more risks during initial periods of employment may be explained by inaccurate and inflated safety-related expectations. These inflated expectations may lead neophytes to feel that the workplace is a safer place than it actually is. This may also inflate their trust in co-workers and management, which in turn may then make the neophyte feel more comfortable about taking risks on the job. The problem with this is that if the neophyte is relatively inexperienced or their training has not adequately prepared them for how their team works, their inaccurate expectations and their behaviour based on these expectations may put them more at risk of accident or injury. What this indicates is that neophytes with relatively little work experience may be likely to have inflated expectations around all aspects of the job role (including safety), compared to those who have more experience.

An additional explanation of why neophytes may take more risk and are more likely to be injured early into their occupational tenure is provided by research based on social influence theories by Westaby and Lowe (2005), who suggest that supervisory and

co-worker expectations predict neophyte's willingness to take risks on the job. The mechanism by which Westaby and Lowe (2005) suggest this relationship functions is through the normative influence of the neophyte's supervisor.

Normative influence refers to a set of implicit or explicit rules emanating from respected or authority figures that dictate acceptable behaviour in a given context (Kaplan & Miller, 1987). The effects of normative influence on behavioural compliance are well documented in a wide range of contexts (Moscovici, 1985). This finding has been supported by research by Zohar (1980) which found that employees' perceptions about management's attitudes towards safety were one of the strongest predictors of overall safety climate. This indicates that neophytes who expect their supervisor will prioritise safety over speed will be likely to display less willingness to take risk on the job, as they acquire some of the safe-working norm.

Westaby and Lowe (2005) also suggest that co-workers will have an influence on neophytes' willingness to take risks through the process of informational influence. Informational influence refers to how information received guides individual behaviour (Kaplan & Miller, 1987). Because supervisors cannot be available to always oversee employee behaviour, neophytes are likely to vicariously learn how to carry out job tasks by observing their co-workers (Graham, Marks & Hansen, 1991). This indicates that normative safety behaviour may be set not only by the neophyte's supervisor, but also by their co-workers. Thus we could expect that neophytes who have higher expectations of co-worker behaviour on the job will also exhibit a lower expectation of willingness to

take risks as they try to match the norm. These propositions form the basis of the first hypothesis in the study:

> *Hypothesis 1: Lower levels of work exposure will be associated with greater safety expectations, higher expected trust (in both management and co-workers) and lower expected risk.*

Accident exposure and risk expectations

The third part of the model concerns neophyte's previous accident exposure, and how this influences their safety expectations and expected willingness to take risks on the job. Cree and Kelloway (1997) suggest that one factor that may affect the level of risk an individual expects in a given job, is their previous level of exposure to accident or injury. In a study of 130 production employees at six packaging plants Cree and Kelloway (1997) found that previous exposure to accidents (both by the individual and vicariously through others) was a significant predictor of individual risk perceptions. This finding is consistent with earlier research by Nelkin and Brown (1984) whose qualitative investigation of hazards experienced by chemical workers found that both the individual's own accident history and their vicarious accident history (accidents which the individual has seen happen, or heard about happening to co-workers in the workplace) predicted how at risk the individual felt themselves (Cree & Kelloway, 1997).

An explanation of why a neophyte's level of accident exposure may be related to their expectations of risk is provided by research on social learning theory (Bandura,

1977). As mentioned earlier, social learning theory research suggests that vicarious learning (learning by observing others) and persuasion (learning based on information received by the organisation) are less effective when forming expectations of self-efficacy than actual experience is (Bandura, 1977). Given this finding, we would expect that accidents that happen to an individual personally would have a greater effect on their future risk appraisals than those that happen to someone else. Surprisingly, although some research has considered the effect of frequency of vicarious exposure to accidents on an individual's perceived risk in the workplace, there has been little (if any) research that has looked at the quality or intensity of the exposure (e.g., whether an individual has experienced an accident or just observed one). Our study extends these findings to neophytes who have not yet entered the workforce (or at least full-time employment) to form the following hypothesis:

> *Hypothesis 2: Past history of accidents (both personal and vicarious) will be associated with lower safety expectations, lower expected trust (in both co-workers and management) and higher expectations of risk.*

Expected trust and risk expectations

The fourth and final part of the model concerns factors that influence and are influenced by neophyte's expected trust in both co-workers and management to look after their safety.

Breaches of the psychological contract and trust

An explanation of why and how an individual's accident history may affect their safety related trust on the job is provided by a study of psychological contracts of safety with 131 highly-skilled employees in supervisory or middle-management roles conducted by Walker and Hutton (2006). The study found direct evidence of reciprocity between employer safety obligations and employee safety obligations suggesting that psychological contracts do exist around safety behaviour in the workplace, and as such detected breaches of safety (including those that result in accidents) may lead to decreases in management and co-worker trust, and higher expectations of risk (Bunderson, 2001; Robinson & Rosseau, 1994). This research forms the basis of the third hypothesis to be explored in the development of the neophyte safety expectations model:

> *Hypothesis 3: Higher exposure to accidents (of any kind – either personal or vicarious) will be associated with lower trust, lower safety expectations and higher expectations of risk.*

This hypothesis makes sense as individuals who have experienced an accident in the past are likely to externalise some of the blame for the accident (perhaps fairly) to those around them at the time.

Trust in management and co-workers, and expectations of risk

One factor that may be implicated in the high incidences of time-lost injuries for young workers is the neophyte's risk-taking orientation, or willingness to take risks on

the job (Westaby & Lowe, 2005). Cree and Kelloway (1997) suggest that an employee's perceptions of how committed their co-workers and management are to health and safety are a significant predictor of their personal risk perceptions. This indicates that neophytes who except that their co-workers, supervisors and management will look out for their safety are likely to feel less at risk, and therefore feel more comfortable in taking risk on the job. It could also be expected that neophytes who trust their co-workers and management to look after their safety would expect that their co-workers and management will behave in a safe manner and support and facilitate safety behaviour. This forms the basis of the fourth hypothesis to be explored in the development of the neophyte safety expectations model:

> *Hypothesis 4: Higher levels of trust in management and co-workers will be associated with higher pre-start safety expectations, and higher expected willingness to take risks.*

Final conclusions

Neophyte safety expectations have so far been overlooked in the occupational health and safety literature. The current study aims to investigate the relationships between neophyte safety expectations, expected trust in management and co-workers, expected willingness to take risks on the job, and neophyte characteristics (such as age, gender, accident history and work exposure).

3.1 Method

3.11 Participants

One-hundred and forty-four participants (83 males with mean age 17.44 years, 58 females with mean age 17.59 years, and 3 unaccounted) completed a questionnaire concerning their safety expectations surrounding work. All participants were 7th-form students recruited from Christchurch (New Zealand) high-schools. Participants received a chocolate bar for their participation in the study. Data collection at all schools took place towards the end of the final term.

Out of 23 schools contacted, 10 responded to the initial email, with 8 of these agreeing to take part. The remaining 13 schools contacted did not respond. Questionnaire response rates are displayed in Table 1.

Table 1

Response rates for safety expectations questionnaire

School	Given	Returned	Rate (% returned)
A	100	77	77.00
B	100	39	40.00
C	70	9	11.43
D	30	6	20.00
E	10	6	60.00
F	10	4	40.00
Other (Post)	4	3	75.00
Total	324	144	44.44

3.12 Materials

Participants received a single questionnaire containing 113 items regarding their job related safety expectations (see Appendix A). The questionnaire included measures of demographics (age and gender), and also asked participants whether they had a *specific job which they would like to have when they leave school*. If participants had a job in mind they were asked to indicate whether they had currently received any training for the job, and to indicate on a 100-point scale ranging from 0 to 100 (0 indicating "Not at all risky" and 100 indicating "Extremely Risky") how risky they expect the job will be.

Please note that data on specific job and risk were not analysed in this thesis – but were collected for use in a future follow-up study once participants are in work. Data collected in this questionnaire will allow matching (using a participant generated code specific to each participant) and these variables will only be analysed during this follow-up study.

The participant's prior exposure to accidents in the workplace was measured: Questions included whether the participant had ever had an accident at work; whether an immediate family member had ever had an accident at work; whether a friend had ever had an accident at work; and whether the participant had ever seen a co-worker have an accident at work. The number of jobs a participant had held while at school, and total months worked across all prior jobs was also measured. The questionnaire also included scales measuring the following safety expectations: Familiarity, Safety communication, Supervisor behaviour, Management safety, Own safety behaviour, Willingness to take

risk, Co-worker trust, Management trust, Co-worker safety behaviour, Crews' reactions to new recruits and Crews' trust in new recruits. The last two scales are not analysed in this thesis and will be examined in a follow-up study.

Items in these scales have been reworded to measure neophyte safety expectations rather than safety perceptions (which must be formed from direct experience on the job). For example, an item of Burt and Stevenson's (2009) Familiarity scale *"Members of my workplace familiarise me with the specific operational procedures which they use"* is reworded as *"Members of my workplace* ***will*** *familiarise me with the specific operational procedures which they use"* in order to measure participant expectations rather than perceptions.

Familiarity

The four items used to measure participant expectations of gaining familiarity on the job (specific on the job knowledge) were drawn from Burt and Stevenson (2009). An example item of the familiarity scale is *"Members of my workplace will familiarise me with the specific operational procedures which they use"* (See Appendix A – "Gaining specific knowledge" section). The familiarity scale asked participants to indicate how much they agree with each statement on a 5 point Likert-type scale (1 = *strongly disagree* to 5 = *strongly agree*). Responses were totalled and divided by 4 to produce a scale score which could range from 1 – 5. A larger score indicates that the participant expects members of their crew will inform them about specific on the job knowledge.

Burt and Stevenson (2009) found that all four familiarity items correlated significantly ($p < 0.01$) with a measure of team interaction. No measure of internal consistency for the familiarity scale was reported (Burt & Stevenson, 2009). The current study found a Cronbach's Alpha of 0.78 for the 4-item familiarity scale.

Safety communication

The ten items used to measure participant expectations of safety communication were drawn from Burt, Gladstone and Grieve's (1998) *CARE* scale, and Mueller, DaSilva, Townsend and Tetrick's (1999) *Co-worker commitment to safety* scale (see Appendix A – *Safety communication* section).

An example item of the CARE scale used to measure participant expectations of safety communication is *"Workers will discuss changes that could improve safety".* An example item of the *Co-worker commitment to safety* scale used to measure participant expectations of safety communication is *"Workers will remind each other of the need to follow safety regulations"*. The safety communications scale asked participants to indicate how much they agree with each statement on a 5 point Likert-type scale (1 = *strongly disagree* to 5 = *strongly agree*). Responses were totalled and divided by 10 to produce a scale score which could range from 1 – 5. A larger score indicates that the participant expects that aspects of safety (such as pointing out hazards) are likely to be communicated on the job. The current study found a Cronbach's Alpha of 0.80 for the 10-item safety communication scale.

Supervisor behaviour

The four items that were used to measure participant expectations of supervisor behaviour were drawn from a five-item scale in Zohar (2000) (See Appendix A – *supervisor expectations* section). An example item is *"When pressure builds up, my crew supervisor will want the crew to work faster, rather than by the rules".* All four of the items are negatively worded and reverse coded. The supervisor behaviour scale asked participants to indicate how much they agree with each statement on a 5 point Likert-type scale (1 = *strongly disagree* to 5 = *strongly agree*). After reverse coding, responses were totalled and divided by 4 to produce a scale score which could range from 1 – 5. A larger score indicates that the participant expects their supervisor is likely to give higher regard to safety. The current study found a Cronbach's Alpha of 0.77 for the 4-item supervisor behaviour scale.

Management safety

Thirty-seven items were used to measure expectations of how management will deal with safety in the workplace (see Appendix A – *Management safety* section). Eight items concerning management safety expectations were drawn from a shortened version of Chmiel's (2005) *Management Safety Climate* scale. An example item is *"Management will take the safety ideas of employees seriously".* A further twenty-nine items used to measure expectations of how management will deal with safety were adapted from Walker and Hutton's (2006) research. Items were adapted for this research, by adding "*Management will*" to the start of each item. An example item is *"Management will have visible safety documentation".*

A principal component factor analysis was needed because of the large number of items in the management expectations scale. In factor analysis, the Kaiser-Meyer-Olkin statistic (K-M-O) is a measure of sampling adequacy representing the ratio of the squared correlation between variables to the squared partial correlation between variable. The K-M-O statistic can range between 0 and 1, with a value close to one indicating that factor analysis should yield distinct and reliable factors, while values between 0.5 and 0.7 are considered mediocre; between 0.7 and 0.8 are good, values between 0.8 and 0.9, very good, and over 0.9, excellent (Field, 2005). In order to factor analyse, one must ensure the K-M-O statistic and the sphericity of the scale are acceptable. The K-M-O statistic for this analysis was 0.92, a respectable result indicating that the principal component factor analysis was likely to yield distinct and reliable factors. The Bartlett Test of Sphericity resulted in a value of 3434.64 ($df = 666$, $p < 0.001$), with significance indicating scale item independence.

The scree plot for the management expectations scale suggested that all items are loading on a single factor solution. The Eigenvalue for the first factor is 16.46 and accounts for 44.48% of total variance. Twenty-one items loaded on this factor. A Cronbach's Alpha of 0.948 was obtained. The management safety scale asked participants to indicate how much they agree with each statement on a 5 point Likert-type scale (1 = *strongly disagree* to 5 = *strongly agree*). Responses were totalled and divided by 21 to produce a scale score which could range from 1 – 5. A larger score indicates that the participant expects that management is likely to give higher regard to safety.

Own safety behaviour

Thirty-three were items used to measure expectations of the participants' own safety behaviour (See Appendix A – *Own safety behaviour* section). Adaptation of items simply uses the future tense "I will" instead of the current tense "I". Participant's expectations of how safely they will work on the job was measured using a subset of three items from a six item scale by Chmiel's (2005) that examined on-the-job safety behaviours. An example item is *"I will never find following safety procedures a hassle"*. A further twenty-seven items used to measure participant expectations of their own safety behaviour were drawn from Walker and Hutton's (2006) research on the psychological contract applied to workplace safety. An example item is *"I will participate in safety training"*. Finally, three items used to measure participant expectations of their own safety participation were drawn (and adapted) from a four item scale by Neal, Griffin and Hart (2000). An example item is *"I will voluntarily carry out tasks or activities that help to improve workplace safety"*.

A principal component factor analysis was needed because of the large number of items in the own safety behaviour expectations scale. The K-M-O statistic for this analysis was 0.91, a respectable result indicating that the principal component factor analysis was likely to yield distinct and reliable factors. The Bartlett Test of Sphericity resulted in a value of 2909.07 ($df = 528$, $p < 0.001$), with significance indicating scale item independence.

The scree plot for the own safety behaviour expectations scale suggested a single factor solution. The Eigenvalue for the first factor is 13.99 and accounts for 42.40% of total variance. Eight items loaded on this. The 8 item scale produced a Cronbach's Alpha of 0.88. The own safety behaviour scale asked participants to indicate how much they agree with each statement on a 5 point Likert-type scale (1 = *strongly disagree* to 5 = *strongly agree*). Responses were totalled and divided by thirty-three to produce a scale score which could range from 1 – 5. A larger score indicates that the participant expects that they will behave safely on the job.

Willingness to take risk

A single item used to measure expectations of participants' own willingness to take risks was drawn from work by Mayer, Davis and Schoorman (1995). The item is *"I will need to take some risks in doing this job".* The item denotes an expectation of risk, and a willingness to assume that risk. Participants were asked to indicate how much they agreed with the statement on a 5 point Likert-type scale (1 = *strongly disagree* to 5 = *strongly agree*).

Co-worker trust and management trust

Single-item measures of management and co-worker trust were developed specifically for this questionnaire. Management trust: *"I trust management will do everything they can to ensure my safety"*; Co-worker trust: *"I trust my co-workers will do everything they can to ensure my safety"*. Participants were asked to indicate how much they agreed with each statement on a 5 point Likert-type scale (1 = *strongly disagree* to 5 = *strongly agree*).

Co-worker safety behaviour

Six items used to measure expectations of co-worker safety behaviour were drawn from Burt, Gladstone and Grieve's (1998) *CARE* scale, and from Mueller, DaSilva, Townsend and Tetrick's (1999) 3-item *Co-worker commitment to safety* scale. An example item of the *CARE* scale used to measure expectations of co-worker's reporting of hazards and accidents is *"Co-workers will immediately remove hazards if possible"*. An example item of the *Co-worker commitment to safety* scale used to measure expectations of co-worker commitment to safety is *"Co-workers will expect other workers to behave safely"*. The co-worker safety behaviour scale asked participants to indicate how much they agree with each statement on a 5 point Likert-type scale (1 = *strongly disagree* to 5 = *strongly agree*). Responses were totalled and divided by 6 to produce a scale score which could range from 1 – 5. A larger score indicates that the participant expects that co-workers are likely to give a high regard to safety. The current study found a Cronbach's Alpha of 0.85 for the 6-item co-worker safety behaviour scale.

Crews' reactions to new recruits

Four items were used to measure participants' expectations of their future teams' reactions to new recruits, and were adapted from work by Burt & Stevenson (2009) and Burt, Chmiel and Hayes (2009). An example item of this scale is *"Workers will pay more attention to safety when a new member joins"*. The crew reactions to new recruits scale asked participants to indicate how much they agree with each statement on a 5 point Likert-type scale (1 = *strongly disagree* to 5 = *strongly agree*). Responses were totalled and divided by 6 to produce a scale score which could range from 1 – 5. A larger score

indicates that the participant expects that crew members are likely to give more regard to safety when a new member joins their team. The current study found a Cronbach's Alpha of 0.80 for the 4-item crew reactions to new recruits scale. This scale was included to be used with a follow-up study and was not analysed in this thesis.

Crews' trust in new recruits

A single item used to measure participants' expectations of how much trust their team will immediately trust them to comply with safety procedures and policy was drawn from work by Burt, Chmiel and Hayes (2009). The item is *"Workers will immediately trust a new member to comply with safety procedures and policy".* Participants were asked to indicate how much they agreed with the statement on a 5 point Likert-type scale (1 = *strongly disagree* to 5 = *strongly agree*). This item was included to be used with a follow-up study and was not analysed in this thesis.

3.13 Procedure

Participant recruitment

Participants from schools were recruited through a senior school official (either a principal, dean, or careers advisor at the school). Questionnaires were completed in a supervised controlled study environment (e.g., assembly or classroom), administered either by a researcher or a teacher at the school.

For a minority of cases (n=6) questionnaires were administered by mail with a pre-paid self-addressed envelope to participants who had seen a flyer at the school

outlining the study. At one school, a parental consent form outlining the study was sent home to parents before participants were allowed to take place in the study (See Appendix B).

Administration

Participants were asked to read and fill out a questionnaire regarding their *"job related safety expectations"* and told that the purpose of the research is to further our understanding of factors that influence worker safety (See Appendix A - p. 1).

Participants were verbally instructed before agreeing to participate that the questionnaire takes about 12-15 minutes to complete (12 minutes on average in pilot trials). Participants were given a chocolate bar on completion of the survey (or sent one with their questionnaire if they received one by mail).

Anonymity, confidentiality and participant withdrawal

Participants are instructed on the first page of the questionnaire that the survey is entirely anonymous and confidential and that they should not write their name on it. They are also instructed that nobody outside the research group will have access to their personal views (See Appendix A, p. 1).

Instructions for completing the survey

Participants were also instructed to complete the survey in relation to what they expect when they enter the workforce, using their first reaction, and to answer all of the

questions. Further, they were told that the usefulness of the survey depends upon the frankness and honesty with which they answer the questions.

Informed Consent

Participants were given a statement of informed consent instructing them that *"By completing this survey you are consenting to the publication of the results on the basis that no individual or organisations are identified".* Finally, participants were given contact details of the senior supervisor and the primary researcher if they had any questions about the research.

4.1 Results

4.11 Descriptive Analysis

Table 2 presents the sample number, minimum and maximum, mean and standard deviation of the responses for each of the neophyte safety expectation facets. An inspection of Table 2 shows that participants tended to have reasonably high mean expectation scores for all safety facets. Participants also produced reasonably high mean scores for expected risk and trust scales.

Table 2

Descriptive statistics for all neophytes

	N	Minimum	Maximum	Mean	Std. Dev.
Safety expectations					
Familiarity	142	2.33	5.00	3.97	0.61
Safety communication	142	2.30	5.00	3.65	0.57
Supervisor behaviour	142	1.00	5.00	3.49	0.79
Management behaviour	142	2.24	5.00	3.84	0.61
Own behaviour	142	1.13	5.00	3.87	0.62
Co-worker behaviour	142	2.00	5.00	3.82	0.65
Expected risk					
Willingness to take risk	142	1.00	5.00	3.42	1.02
Trust expectations					
Co-worker trust	142	1.00	5.00	3.67	0.95
Management trust	142	1.00	5.00	3.75	1.00

Gender Analysis

Tables 3 and 4 present the sample number, minimum, maximum, mean and standard deviation by gender for each of the responses. An analysis of sex differences using one-way analysis of variance (ANOVA) revealed that males and females significantly differed in their responses to the following expectation scales: Familiarity – $F(1, 137) = 4.11$, $p < 0.05$; Safety communication – $F(1, 137) = 6.91$, $p < 0.05$; Co-worker safety behaviour – $F(1, 137) = 4.010$, $p < 0.05$; and Own safety behaviour - $F(1, 137) = 8.02$, $p < 0.01$). The management safety behaviour scale was close to significance $F(1, 137) = 3.86$, $p = 0.051$. An inspection of Table 3 showed that females had a tendency to have higher expectations surrounding familiarity, safety communication, co-worker safety behaviour, their own safety behaviour and management safety behaviour. The ANOVA results for expected risk $F(1, 137) = 0.77$, *ns*; expected trust in management $F(1, 137) = 0.51$, *ns*; and expected trust in co-workers $F(1, 137) = 3.13$, *ns* did not reach significance indicating that male and female neophytes did not differ significantly on these scales.

Table 3

Descriptive statistics of safety expectations by gender

	N	Minimum	Maximum	Mean	Std. Dev.
Safety expectations					
Familiarity					
M	81	2.33	5.00	3.89	0.62
F	58	3.00	5.00	4.10	0.57
Safety communication					
M	81	2.30	4.90	3.55	0.49
F	58	2.40	5.00	3.80	0.64
Supervisor behaviour					
M	81	1.00	5.00	3.42	0.78
F	58	1.50	5.00	3.59	0.78
Management behaviour					
M	81	2.24	4.90	3.75	0.61
F	58	2.76	5.00	3.95	0.60
Own behaviour					
M	81	1.13	5.00	3.75	0.68
F	58	2.75	5.00	4.04	0.49
Co-worker behaviour					
M	81	2.00	5.00	3.73	0.69
F	58	2.33	5.00	3.96	0.58

Table 4

Descriptive statistics of expected risk and trust expectations by gender

	N	Minimum	Maximum	Mean	Std. Dev.
Expected risk					
Willingness to take risk					
M	81	1.00	5.00	3.48	1.00
F	58	1.00	5.00	3.33	1.05
Trust expectations					
Co-worker trust					
M	81	1.00	5.00	3.56	1.01
F	58	1.00	5.00	3.84	0.85
Management trust					
M	81	1.00	5.00	3.70	1.10
F	58	2.00	5.00	3.83	0.86

4.12 Analysis of gender differences

A chi-square analysis using cross-tabulation was used to determine whether observed gender differences in responding were due to differential representation of each gender in some variables (such as males having significantly more exposure to workplace accidents, or significantly more job experience than females).

Exposure to accidents

Representations of each gender in levels of accident exposure are presented in Table 5. The chi-square analysis for accident exposure revealed that the observed gender

differences in safety expectations were not due to differential representation of males and females within the following factors: personal experience with accidents $\chi^2(1, N = 139) = 1.41$, *ns*; accidents by family members $\chi^2(1, N = 139) = 1.01$, *ns*; accidents by friends $\chi^2(1, N = 139) = 2.58$, $p > 0.05$; and seeing an accident at work $\chi^2(1, N = 139) = 1.72$, *ns*.

Table 5

Cross-tabulations of accident exposure by gender

		Personal accident		Immediate family accident		Co-worker accident		Friend accident	
		No	Yes	No	Yes	No	Yes	No	Yes
Sex	Male	57	24	40	40	42	39	50	31
	Female	46	12	34	24	38	20	42	16
Total		103	36	74	64	80	59	92	47

Job experience

Representations of each gender in levels of job experience are presented in Table 6. A one-way analysis of variance for job experience revealed that the observed gender differences in safety expectations were not due to differential representation of males and females within either total jobs held $F(1, 136) = 0.09$, *ns*; or total months worked $F(1, 133) = 1.11$, *ns*.

Table 6

Descriptive statistics of job experience by gender

		N	Mean	Std. Dev.	Minimum	Maximum
Total different jobs (including work while at school)	Male	80	1.94	1.24	0	5
	Female	58	2.00	1.24	0	6
	Total	138	1.96	1.23	0	6
Total months worked (across all jobs)	Male	78	19.38	21.40	0	120
	Female	57	23.10	18.41	0	84
	Total	135	20.95	20.20	0	120

These ANOVA results indicate that the observed significant differences between males and females concerning safety expectations of familiarity, safety communication, co-worker safety behaviour, own safety behaviour and management safety behaviour are not due to differential over or under-representation of one gender at different levels of job experience or accident exposure. For example, it appears males are equally as likely to have high exposure to accidents (both personally and vicariously) as females, and that males are equally as likely to have high levels of job experience (both in months and number of jobs held) as females. This suggests that the observed gender differences are real and attributable to participant gender, and as such informs further analysis of the data and hypothesis testing. The rest of the analysis of the data will test the hypotheses outlined in the introduction for males and females separately, to account for these observed gender differences in safety expectations.

4.13 Work exposure and safety expectations

Pearson correlation coefficients were used to test hypothesis 1, that *lower levels of work exposure will be associated with greater safety expectations, higher expected trust (in both management and co-workers) and lower expected risk*. Significance levels reported for correlation coefficients are two-tailed.

Correlation coefficients of work exposure, safety expectations, expected trust and expected risk are presented in Table 7. An inspection of Table 7 failed to find any significant relationships between work exposure (total jobs held and total months worked) and safety expectation facets for either male or female neophytes. However, for males, the correlation between total months held and familiarity expectations was approaching significance ($p = 0.07$); as was the correlation between total jobs held and expected trust in co-workers ($p = 0.06$). Although no conclusions can be drawn about the hypothesis from these non-significant results it suggests that male neophytes who have higher exposure to work may be likely to have lower expectations of how much their co-workers will familiarise them with specific aspects of the job, and how safely their co-workers will behave. This makes sense as neophytes who have worked in relatively few different jobs have less experience to draw on when forming expectations of co-workers in other jobs. Again, these relationships (if proven to be true) may help to explain the high accident rates for younger age-groups in the workplace. A further inspection of Table 7 revealed a significant relationship between female neophyte's total number of jobs worked and their expectations of risk on the job. This finding did not hold for male neophytes. These findings lend partial support to hypothesis 1.

Table 7

Correlation coefficients of work exposure, safety expectations, expected trust and expected risk

	Total months worked	Familiarity	Safety communication	Supervisor safety behaviour	Management safety behaviour	Own safety behaviour	Co-worker safety behaviour	Summed expectations	Co-worker trust	Management trust	Expected risk
Total jobs											
Males	0.20	-0.07	0.04	-0.19	-0.15	0.03	-0.01	-0.01	-0.21	-0.18	0.02
N	77	80	80	80	80	80	80	80	80	80	80
Females	0.41**	0.02	0.12	0.06	0.05	0.07	-0.04	0.00	-0.05	0.08	0.32*
N	57	58	58	58	58	58	58	58	58	58	58
Total months worked											
Males		-0.21	0.06	0.12	0.14	0.13	0.15	0.08	0.04	0.11	0.00
N		78	78	78	78	78	78	78	78	78	78
Females		-0.01	0.09	-0.01	-0.06	-0.03	-0.09	-0.03	-0.17	0.09	0.12
N		57	57	57	57	57	57	57	57	57	57

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

4.14 Accident exposure, safety expectations and expected risk

A one-way ANOVA was used to test hypothesis 2, that neophytes' *past history of accidents (both personal and vicarious) will be associated with lower safety expectations, lower expected trust (in both co-workers and management) and higher expectations of risk.* Personal accidents denote those workplace accidents where the neophyte is the primary victim (e.g. the person who has been injured) while vicarious accidents denote that the neophyte knows either a friend, family member or co-worker that has had an accident at work.

Tables 8 and 9 present the sample number, mean, standard deviation, standard error, minimum and maximum score for male and female neophytes' safety expectations, expected trust and expected risk by level of personal accident exposure (no denotes the individual has not experienced a personal accident while at work, while yes denotes that the individual has had a personal accident). A one-way ANOVA failed to find any significant differences between safety expectation score means by level of personal accident exposure for either male or female neophytes. However, for male neophytes mean differences in safety communication expectations were approaching significance between those who had experienced a personal accident compared to those who had not $F(1, 79) = 3.64$, $p = 0.06$. This finding did not extend to female neophytes $F(1, 56) = 1.93$, *ns*. Although no conclusions can be drawn about the hypothesis from this non-significant finding, inspection of safety communication score means in Table 8 suggests that male neophytes who have experienced a personal accident may actually be likely to hold higher expectations of safety communication in the workplace. This finding runs

contrary to the prediction made by hypothesis 2. A possible explanation for this finding will be discussed later in this thesis.

One-way ANOVA also found a significant main effect of personal accident exposure on male neophytes' expected trust in management $F(1, 79) = 5.02$, $p < 0.05$, and neophytes' expected risk on the job $F(1, 79) = 4.39$, $p < 0.05$, in the expected direction. This finding did not extend to female neophytes for whom differences in means of expected trust in management were approaching significance $F(1, 56) = 3.60$, $p = 0.06$, while differences in means of expected risk were not $F(1, 56) = 0.00$, *ns*. These findings lend partial support to the prediction made by hypothesis 2, that *past history of accidents (both personal and vicarious) will be associated with lower safety expectations, lower expected trust (in both co-workers and management) and higher expectations of risk.*

Table 8

Descriptive statistics of personal accident exposure and safety expectations (by gender)

	Personal accident	N	Mean	Std. Dev.	Min	Max
Familiarity						
Male	No	57	3.90	0.63	2.50	5.00
	Yes	24	3.88	0.61	2.33	5.00
Female	No	46	4.09	0.57	3.00	5.00
	Yes	12	4.15	0.62	3.00	5.00
Safety communication						
Male	No	57	3.48	0.48	2.30	4.60
	Yes	24	3.71	0.49	2.60	4.90
Female	No	46	3.86	0.62	2.40	5.00
	Yes	12	3.58	0.71	2.70	4.90
Supervisor safety behaviour						
Male	No	57	3.43	0.79	1.00	5.00
	Yes	24	3.38	0.78	2.00	4.75
Female	No	46	3.59	0.76	1.50	5.00
	Yes	12	3.60	0.90	1.75	5.00
Management safety behaviour	No	57	3.76	0.56	2.29	4.90
Male	Yes	24	3.72	0.73	2.24	4.90
Female	No	46	4.00	0.56	2.76	4.95
	Yes	12	3.77	0.73	2.86	5.00
Own safety behaviour	No	57	3.75	0.72	1.13	5.00
Male	Yes	24	3.75	0.58	2.63	5.00
Female	No	46	4.09	0.45	3.00	5.00
	Yes	12	3.86	0.58	2.75	4.88
Co-worker safety behaviour	No	57	3.70	0.69	2.00	5.00
Male	Yes	24	3.83	0.68	2.50	5.00
Female	No	46	4.00	0.59	2.33	5.00
	Yes	12	3.78	0.56	2.83	4.67

Table 9

Descriptive statistics of personal accident exposure, expected trust and expected risk (by gender)

	Personal accident	N	Mean	Std. Dev.	Min	Max
Co-worker trust Male	No	57	3.63	0.98	1.00	5.00
	Yes	24	3.38	1.10	1.00	5.00
Female	No	46	3.87	0.86	1.00	5.00
	Yes	12	3.75	0.87	2.00	5.00
Management trust Male	No	57	3.88	0.95	1.00	5.00
	Yes	24	3.29	1.33	1.00	5.00
Female	No	46	3.93	0.77	2.00	5.00
	Yes	12	3.42	1.08	2.00	5.00
Expected risk Male	No	57	3.33	0.95	1.00	5.00
	Yes	24	3.83	1.05	1.00	5.00
Female	No	46	3.33	1.01	1.00	5.00
	Yes	12	3.33	1.23	1.00	5.00

Vicarious accident exposure, safety expectations and risk expectations

Tables 10 and 11 present the sample number, mean, standard deviation, standard error, minimum and maximum score for male and female neophytes by level of vicarious accident exposure (no denotes the individual has not been exposed to a workplace accident vicariously, while a response of yes denotes that the individual has heard about a workplace accident that happened to a friend, immediate family member or co-worker). A one-way ANOVA found no significant main effects of vicarious accident exposure for any of the measured safety, trust or risk expectations.

Table 10

Descriptive statistics of vicarious accident exposure and safety expectations (by gender)

	Personal accident	N	Mean	Std. Dev.	Min	Max
Familiarity	No	21	3.89	0.59	3.00	5.00
Male	Yes	59	3.88	0.64	2.33	5.00
	No	21	4.13	0.51	3.00	5.00
Female	Yes	37	4.09	0.61	3.00	5.00
Safety communication	No	21	3.48	0.56	2.50	4.90
Male	Yes	59	3.57	0.47	2.30	4.60
	No	21	3.74	0.58	2.60	5.00
Female	Yes	37	3.84	0.68	2.40	4.90
Supervisor safety behaviour	No	21	3.43	0.70	2.00	4.75
Male	Yes	59	3.41	0.82	1.00	5.00
	No	21	3.73	0.75	1.50	5.00
Female	Yes	37	3.52	0.80	1.75	5.00
Management safety behaviour	No	21	3.71	0.54	2.86	4.76
Male	Yes	59	3.76	0.64	2.24	4.90
	No	21	4.02	0.51	2.95	4.90
Female	Yes	37	3.92	0.65	2.76	5.00
Own safety behaviour	No	21	3.74	0.69	2.00	4.71
Male	Yes	59	3.74	0.69	1.13	5.00
	No	21	4.01	0.51	3.00	5.00
Female	Yes	37	4.06	0.48	2.75	4.88
Co-worker safety behaviour	No	21	3.55	0.72	2.00	4.83
Male	Yes	59	3.81	0.67	2.00	5.00
	No	21	3.93	0.62	2.33	5.00
Female	Yes	37	3.97	0.57	2.83	5.00

Table 11

Descriptive statistics of vicarious accident exposure, expected trust and expected risk (by gender)

	Personal accident	N	Mean	Std. Dev.	Min	Max
Co-worker trust Male	No	21	3.67	0.80	2.00	5.00
	Yes	59	3.51	1.09	1.00	5.00
Female	No	21	3.81	0.98	1.00	5.00
	Yes	37	3.86	0.79	2.00	5.00
Management trust Male	No	21	3.81	0.75	2.00	5.00
	Yes	59	3.66	1.21	1.00	5.00
Female	No	21	3.90	0.77	3.00	5.00
	Yes	37	3.78	0.92	2.00	5.00
Expected risk Male	No	21	3.24	1.00	1.00	4.00
	Yes	59	3.56	1.00	1.00	5.00
Female	No	21	3.14	1.06	1.00	5.00
	Yes	37	3.43	1.04	1.00	5.00

Any accident exposure, safety expectations, expected trust and expected risk

Tables 12 and 13 present the sample number, mean, standard deviation, standard error, minimum and maximum score for male and female neophytes by level of *any* accident exposure (no denotes the individual has not been exposed to a workplace accident, while a response of yes denotes that the individual has experienced a workplace accident, either personally or vicariously). While Tables 8-11 displayed means for neophytes who had or had not experienced a specific type of accident (e.g. either personal or vicarious), Tables 12-13 display means for those who had or had not been exposed to

any type of accident (whether it be personal, or vicariously through either a co-worker, friend or immediate family member).

A one-way ANOVA found a main effect of any accident exposure on male neophyte's expectations of co-worker safety behaviour $F(1, 79) = 3.97$, $p = 0.05$. This finding did not extend to female neophytes for whom score means of expectations of co-worker safety behaviour did not significantly differ with level of accident exposure $F(1, 56) = 0.12$, $p = 0.73$. This finding suggests that (for male neophytes at least) neophytes who have been exposed to any form of accident (either personally or vicariously) are likely to hold *higher* expectations of co-worker safety behaviour in the workplace. These findings contradict the prediction made by hypothesis 2, that *past history of accidents (both personal and vicarious) will be associated with lower safety expectations, lower expected trust (in both co-workers and management) and higher expectations of risk.*

Table 12

Descriptive statistics of any accident exposure and safety expectations (by gender)

	Personal accident	N	Mean	Std. Dev.	Min	Max
Familiarity Male	No	19	3.87	0.61	3.00	5.00
	Yes	62	3.90	0.63	2.33	5.00
Female	No	18	4.17	0.54	3.00	5.00
	Yes	40	4.08	0.59	3.00	5.00
Safety communication Male	No	19	3.39	0.46	2.50	4.20
	Yes	62	3.60	0.49	2.30	4.90
Female	No	18	3.75	0.60	2.60	5.00
	Yes	40	3.83	0.67	2.40	4.90
Supervisor safety behaviour Male	No	19	3.38	0.66	2.00	4.50
	Yes	62	3.43	0.82	1.00	5.00
Female	No	18	3.67	0.75	1.50	4.50
	Yes	40	3.56	0.80	1.75	5.00
Management safety behaviour Male	No	19	3.63	0.50	2.86	4.48
	Yes	62	3.78	0.64	2.24	4.90
Female	No	18	4.03	0.51	2.95	4.90
	Yes	40	3.92	0.64	2.76	5.00
Own safety behaviour Male	No	19	3.73	0.72	2.00	4.71
	Yes	62	3.75	0.67	1.13	5.00
Female	No	18	4.04	0.55	3.00	5.00
	Yes	40	4.04	0.46	2.75	4.88
Co-worker safety behaviour Male	No	19	3.46	0.69	2.00	4.67
	Yes	62	3.82	0.67	2.00	5.00
Female	No	18	3.92	0.67	2.33	5.00
	Yes	40	3.98	0.55	2.83	5.00

Table 13

Descriptive statistics of any accident exposure, expected trust and expected risk (by gender)

	Personal accident	N	Mean	Std. Dev.	Min	Max
Co-worker trust Male	No	19	3.63	0.76	2.00	5.00
	Yes	62	3.53	1.08	1.00	5.00
Female	No	18	3.83	1.04	1.00	5.00
	Yes	40	3.85	0.77	2.00	5.00
Management trust Male	No	19	3.79	0.71	2.00	5.00
	Yes	62	3.68	1.20	1.00	5.00
Female	No	18	4.00	0.77	3.00	5.00
	Yes	40	3.75	0.90	2.00	5.00
Expected risk Male	No	19	3.16	1.01	1.00	4.00
	Yes	62	3.58	0.98	1.00	5.00
Female	No	18	3.39	0.92	2.00	5.00
	Yes	40	3.30	1.11	1.00	5.00

4.15 Accident exposure, expected trust, safety expectations and expectations of risk

Tables 14-18 present the sample number, mean, standard deviation, standard error, minimum and maximum score for male and female neophytes by level of total accident exposure (0 denotes that the neophyte has no exposure to accidents whether personal or vicarious, while 4 denotes that the neophyte has had exposure to a personal accident and all 3 vicarious accident types measured).

A one-way ANOVA was used to test hypothesis 3, that *higher exposure to accidents (of any kind – either personal or vicarious) will be associated with lower trust, lower safety expectations and higher expectations of risk.* The one-way ANOVA found no significant main effects of total accident exposure for any of the measured trust, safety or risk expectations – for either gender. Hypothesis 3 was not supported.

Table 14

Descriptive statistics of total accident exposure and safety expectations (by gender) – part 1

	Total accident exposure	N	Mean	Std. Dev.	Minimum	Maximum
Familiarity	0	19	3.87	0.61	3.00	5.00
Male						
	1	23	3.86	0.70	3.00	5.00
	2	16	3.91	0.55	2.50	4.75
	3	10	3.71	0.71	2.33	4.75
	4	12	4.08	0.57	3.00	5.00
Female	0	18	4.17	0.54	3.00	5.00
	1	23	4.05	0.54	3.00	5.00
	2	6	3.88	0.72	3.00	5.00
	3	7	4.32	0.43	4.00	5.00
	4	4	4.06	0.97	3.00	5.00
Safety communication	0	19	3.39	0.46	2.50	4.20
Male						
	1	23	3.57	0.56	2.30	4.90
	2	16	3.54	0.55	2.80	4.60
	3	10	3.68	0.39	3.10	4.20
	4	12	3.64	0.38	2.60	4.00
Female	0	18	3.75	0.60	2.60	5.00
	1	23	3.92	0.63	2.40	4.90
	2	6	3.82	0.68	2.70	4.50
	3	7	3.59	0.81	2.70	4.90
	4	4	3.73	0.71	2.90	4.50

Table 15

Descriptive statistics of total accident exposure and safety expectations (by gender) – part 2

	Total accident exposure	N	Mean	Std. Dev.	Minimum	Maximum
Supervisor safety behaviour Male	0	19	3.38	0.66	2.00	4.50
	1	23	3.20	0.94	1.00	5.00
	2	16	3.72	0.63	2.50	5.00
	3	10	3.73	0.69	2.50	4.50
	4	12	3.23	0.82	2.00	4.50
Female	0	18	3.67	0.75	1.50	4.50
	1	23	3.64	0.83	2.00	5.00
	2	6	3.46	0.71	2.50	4.25
	3	7	3.50	0.75	2.50	4.50
	4	4	3.38	1.13	1.75	4.25
Management safety behaviour Male	0	19	3.63	0.50	2.86	4.48
	1	23	3.77	0.62	2.29	4.90
	2	16	3.83	0.65	2.62	4.81
	3	10	3.78	0.73	2.24	4.57
	4	12	3.75	0.69	2.33	4.90
Female	0	18	4.03	0.51	2.95	4.90
	1	23	4.05	0.55	3.14	4.95
	2	6	3.66	0.77	2.76	4.62
	3	7	3.67	0.83	2.86	4.81
	4	4	4.04	0.65	3.62	5.00

Table 16

Descriptive statistics of total accident exposure and safety expectations (by gender) – part 3

	Total accident exposure	N	Mean	Std. Dev.	Minimum	Maximum
Own safety behaviour Male	0	19	3.73	0.72	2.00	4.71
	1	23	3.68	0.83	1.13	5.00
	2	16	3.77	0.58	3.00	4.75
	3	10	3.75	0.48	2.88	4.38
	4	12	3.83	0.68	2.63	5.00
Female	0	18	4.04	0.55	3.00	5.00
	1	23	4.14	0.38	3.50	4.88
	2	6	4.00	0.43	3.50	4.50
	3	7	3.71	0.62	2.75	4.75
	4	4	4.13	0.57	3.63	4.88
Co-worker safety behaviour Male	0	19	3.46	0.69	2.00	4.67
	1	23	3.80	0.58	2.67	4.83
	2	16	3.91	0.82	2.00	5.00
	3	10	3.63	0.63	2.50	4.33
	4	12	3.92	0.71	2.83	5.00
Female	0	18	3.92	0.67	2.33	5.00
	1	23	4.05	0.47	3.33	5.00
	2	6	4.08	0.75	3.00	5.00
	3	7	3.74	0.69	2.83	4.67
	4	4	3.79	0.42	3.17	4.00

Table 17

Descriptive statistics of total accident exposure and expected trust (by gender)

	Total accident exposure	N	Mean	Std. Dev.	Minimum	Maximum
Co-worker trust Male	0	19	3.63	0.76	2.00	5.00
	1	23	3.70	1.02	2.00	5.00
	2	16	3.50	1.26	1.00	5.00
	3	10	3.30	0.82	2.00	4.00
	4	12	3.42	1.24	1.00	5.00
Female	0	18	3.83	1.04	1.00	5.00
	1	23	3.87	0.69	3.00	5.00
	2	6	3.83	0.98	2.00	5.00
	3	7	3.57	0.98	2.00	5.00
	4	4	4.25	0.50	4.00	5.00
Management trust Male	0	19	3.79	0.71	2.00	5.00
	1	23	4.00	0.95	2.00	5.00
	2	16	3.50	1.32	1.00	5.00
	3	10	3.40	1.35	1.00	5.00
	4	12	3.50	1.38	1.00	5.00
Female	0	18	4.00	0.77	3.00	5.00
	1	23	3.78	0.74	3.00	5.00
	2	6	3.83	0.98	2.00	5.00
	3	7	3.43	1.40	2.00	5.00
	4	4	4.00	0.82	3.00	5.00

Table 18

Descriptive statistics of total accident exposure and expected risk (by gender)

	Total accident exposure	N	Mean	Std. Dev.	Minimum	Maximum
Expected risk Male	0	19	3.16	1.01	1.00	4.00
	1	23	3.43	0.90	2.00	5.00
	2	16	3.63	0.96	2.00	5.00
	3	10	3.70	0.67	2.00	4.00
	4	12	3.67	1.44	1.00	5.00
Female	0	18	3.39	0.92	2.00	5.00
	1	23	3.09	1.16	1.00	5.00
	2	6	3.33	1.21	2.00	5.00
	3	7	3.57	0.98	2.00	5.00
	4	4	4.00	0.82	3.00	5.00

4.16 Expected trust, safety expectations and expectations of risk

Pearson correlation coefficients were used to test hypothesis 4, that *higher levels of trust in management and co-workers will be associated with higher safety expectations, and higher expected willingness to take risks*. Significance levels reported for correlation coefficients are two-tailed. Correlation coefficients of expected trust, safety expectations and expected risk are presented in Table 19.

Expected trust in co-workers

An inspection of Table 19 revealed significant relationships between male and female neophyte's expected trust in co-workers and their expectations of safety communication, management safety behaviour, own safety behaviour and co-worker

safety behaviour. While a significant relationship between expected trust in co-workers and familiarity existed for male neophytes, it did not hold for female neophytes.

Expected trust in management

The correlation analysis displayed in Table 19 also revealed significant relationships between male and female neophyte's expected trust in management and their expectations of safety communication, management safety behaviour, own safety behaviour and co-worker safety behaviour. While a significant relationship between expected trust in management and familiarity existed for male neophytes, it did not hold for female neophytes.

Expected risk

The correlation analysis failed to identify any significant relationships between expected trust in co-workers and expected trust in management with expected risk for either gender.

These results provide partial support for hypothesis 4, and suggest that neophytes who believe their organisation's management and co-workers will look out for their safety subsequently expect their management and the team they work in to utilise a wide range of safety behaviour (such as pointing out hazards and reporting accidents). Unfortunately no conclusion can be drawn about the relationship between expected trust and neophyte expectations of risk.

Table 19

Correlation coefficients of expected trust, safety expectations and expected risk

		Co-worker trust	Management trust	Familiarity	Safety communication	Supervisor safety behaviour	Management safety behaviour	Own safety behaviour	Co-worker safety behaviour	Expected risk
Co-worker trust										
Males		1.00	0.80**	0.27*	0.27*	0.21	0.45**	0.26*	0.51**	-0.08
	N	81	81	81	81	81	81	81	81	81
Females		1.00	0.73**	0.15	0.37**	-0.02	0.48**	0.58**	0.53**	0.10
	N	58	58	58	58	58	58	58	58	58
Management trust										
Males		0.80**	1.00	0.37**	0.25*	0.18	0.52**	0.29**	0.57**	-0.13
	N	81	81	81	81	81	81	81	81	81
Females		0.73**	1.00	0.10	0.41**	0.11	0.64**	0.54**	0.47**	0.04
	N	58	58	58	58	58	58	58	58	58

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

5.1 General Discussion

The results offer partial support to the newcomer safety expectations model proposed in this research. However, our data revealed some significant gender differences in safety expectations that were not due to differential representation of either gender in exposure to accidents (either personal or vicarious) or job experience (either number of jobs held or total number of months worked). The observed gender differences indicated that females had a tendency to hold higher expectations than male neophytes around gaining familiarity, safety communication, co-worker safety behaviour, their own safety behaviour, and management safety behaviour on the job. These gender differences provided an indication that any relationships between accident exposure, job exposure, safety expectations, expected trust and expected risk might function differently for males and female neophytes. As such, further analysis focused on male and female neophytes separately to capture any possible variation in these relationships.

It is worth noting that while male and female neophytes differed significantly on many safety expectations, they did not differ significantly on their expected trust in management or co-workers, or their expected risk. This is somewhat surprising, as given the higher accident rates for males in accident statistics, compared to females, one might expect that males have a tendency to end up selecting riskier work, and have a higher willingness to take risk (their risk-taking orientation) on the job than females (Parker, Stradling & Manstead, 1996; Mayhew, 2000; StatsNZ, 2009). Following from this, we might expect that males might be more likely to hold riskier jobs, and frame their responses to the research scales around a future job that is generally more risky than the

jobs females might have focused on. However, the results did not support this proposition, and while gender differences existed, they were based around safety expectations and not expectations of risk or trust.

The effect of work exposure on safety expectations, expected trust and expected risk

Our data partially supported hypothesis 1 that *lower levels of work exposure will be associated with greater safety expectations, higher expected trust (in both management and co-workers) and lower expected risk*. For female neophytes, high total number of jobs held was found to be significantly associated with higher expectations of risk. This finding indicates that female neophytes who have held more jobs are more likely to expect higher levels of risk in jobs than those who have lower exposure to work. This suggests that females who are relatively new to the workforce may expect to encounter less risk on the job than those who are more experienced – which may lead to them safeguarding themselves less on the job (and in turn, may help to explain why younger, less experienced individuals have higher accident rates than other age groups at work). This may be because neophytes with low work experience have had a fairly limited variety of job types with which to form expectations that can be generalised and applied to other jobs and as such have developed inflated and unrealistic expectations about the risks associated with work.

Although no correlations between either measure of work exposure and safety expectations facets reached significance, for male neophytes the correlation between total months worked and expectations of gaining familiarity was approaching significance, as

was the correlation between total jobs held and expected trust in co-workers. Although the non-significant result means no clear conclusion can be drawn from this data, it tends to suggest that (for male neophytes at least) neophytes who have low exposure to work are likely to have higher expectations that their co-workers will look after their safety and have higher expectations that their co-workers will teach them specific "on-the-job" knowledge, than neophytes with greater exposure to work.

These types of findings and those above suggest that neophyte safety expectations are intuitively unrealistic - that is neophytes with low job exposure tend to hold inflated and unrealistic safety expectations which appear to adjust downwards towards the reality of the job as the neophyte gains more job experience. These adjustments of inflated expectations with work experience are consistent with the concept of 'reality shock', where neophytes entering a job must adjust their inflated and unrealistic safety expectations to the reality of the job (Dugoni & Ilgen, 1981). Research based around 'reality shock' in neophytes surrounding more general, non-safety related expectations indicates that unmet expectations when tested against the reality of the job may account for an extra 28.8% of workplace turnover above normal rates (Wanous, 1989). This turnover tends to occur early into an employees occupational tenure, and this makes sense because it is at the point when a mismatch in expectations is first detected, that the difference between neophyte expectations and the reality of the job (and thus the 'reality shock') are likely to be largest (Wanous, 1989). When considered alongside inflated safety expectations, 'reality shock' raises significant concerns for neophytes in the workplace. While detection of mismatched general expectations may result from a

workplace conflict or a betrayal of trust for a neophyte, detection of a mismatch in safety expectations may only result following an accident or injury to the individual or their crew.

An additional concern is that trust that is given to co-workers freely and not earned may not be beneficial for an employee who is not familiar with the specific practices of their team as it may lower how at risk they feel and therefore how much they safeguard themselves at work (Burt & Stevenson, 2009). These high levels of co-worker trust expectations in inexperienced male neophytes may help to explain why accident rates are highest in young (and therefore relatively inexperienced) males aged 16-24 who are early into their occupational tenure (StatsNZ, 2009; Bentley, Parker, Ashby, Moore & Tappin, 2002). Given that inflated safety expectations are likely to lead to higher risk of accident or injury and early turnover for neophytes starting work, there is a danger that if methods to address these inflated expectations are not utilised, a reciprocal cycle of turnover, injury and hiring may occur for employers hiring new employees (Cellier, Eyrolle & Bertrand, 1995). Neophytes who turn-over need replacing, and given that accident rates are higher for these new employees (Bentley, Parker, Ashby, Moore & Tappin, 2002; StatsNZ, 2009), it is important that safety expectations are managed by organisations in order to retain neophytes and keep them safe.

The effect of accident exposure on safety expectations, expected trust and expected risk

Our data found mixed support for hypothesis 2, the prediction that neophytes' *past history of accidents (both personal and vicarious) will be associated with lower*

safety expectations, lower expected trust (in both co-workers and management) and higher expectations of risk. Although no significant differences were discovered between safety expectation score means for neophytes who had experienced a personal accident and those who had not, a significant main effect of personal accident exposure on male neophytes' expected trust in management and expected risk was discovered, with males who had experienced a personal accident tending to have lower expected trust in management and higher expectations of risk surrounding a job than those who had not. These findings lend partial support to the prediction made by hypothesis 2, suggesting that (for male neophytes at least) neophytes who have experienced a personal accident are likely to have lower expectations of trust in management and higher expectations of expected risk on the job than those who have not experienced a personal accident. This appears to be yet another example of the reality of the job adjusting unrealistic safety expectations through the process of reality shock. However, as noted before, the consequences of a mismatch in safety expectations may be much worse than the consequences of a mismatch in general work expectations. Neophytes who experience a 'safety shock' may not have a chance to adjust their expectations if an accident or injury causes sufficient impairment (or death) that leads to their forced exit from the organisation.

This association between accident exposure and trust makes sense as individuals who have experienced a personal accident may be likely to externalise some of the blame to aspects of the job (such as the organisations' management). Further, it follows that individuals who experience a personal accident on the job are likely to raise their

expectation of how likely accidents are at work, accounting for the observed significant difference in expected risk for those who have experienced a personal accident compared to those who have not. Although no clear conclusion can be made about the effect of personal accidents on females trust in management, it is likely that (given the close to significance finding) personal accidents will affect trust in management for these neophytes as well. One explanation of why the main effect of personal accident exposure on trust in management was not significant for females may be because of gender differences in attribution style, in that females have more of a tendency than males to internalise more of the blame that surrounds an accident rather than externalising it to job factors such as the organisation's management (Martin & Nivens, 1987).

No main effect of vicarious exposure to accidents on safety expectations, expected risk or expected trust were found for either gender, indicating that personal accidents play a far larger part in determining safety expectations, expected trust and expected risk than those which happen to someone else, regardless of who the person is. As such no conclusion can be made about vicarious accident exposure and whether it affects safety expectations, expected trust, or expected risk at all.

For males, a significant main effect of exposure to *any* kind of accident was found on expectations of how safely neophytes expect co-workers will behave on the job. A main effect on co-worker safety behaviour was not found for personal accident exposure alone so this indicates that some form of vicarious accident exposure does play a part in (at least male) neophytes expectations of co-worker safety behaviour. However, the

direction of the effect did not support hypothesis 2 as it was found that neophytes who had experienced *any* sort of accident (whether personal or vicarious) were likely to have *higher* expectations of co-worker safety behaviour than those who had not experienced a personal accident. This is contrary to the prediction made in hypothesis 2 that increased accident exposure will be associated with lower safety expectations. A possible reason why accident exposure may lead to higher expectations of safety behaviour (such as co-worker safety behaviour) in the workplace may be that following an accident, individuals may feel that because they become more cautious on the job, others may follow their lead and also behave in a safer manner. Another possibility is that following an accident, neophytes generate resentment towards salient groups that they perceive may have contributed to the accident (such as co-workers and management), and as such they raise their expectations (and thus, the standard of behaviour to which they will hold those groups).

Our data offered no support for hypothesis 3, that *higher exposure to accidents (of any kind – either personal or vicarious) will be associated with lower trust, lower safety expectations and higher expectations of risk*. No significant differences were found between means at different levels of accident exposure of any kind. This finding indicates that the quantity of accidents a neophyte is exposed to is unlikely to be as important in forming their safety expectations, expected trust and risk expectations as the quality (or type) of exposure (e.g. personal or vicariously experienced accidents).

The effect of expected trust on safety expectations and expectations of risk

Our data found strong support for hypothesis 4, that *higher levels of trust in management and co-workers will be associated with higher safety expectations, and higher expected willingness to take risks.* A correlation analysis found significant relationships between neophyte's expected co-worker trust and safety communication, management safety behaviour and their own safety behaviour for both genders. This finding provides strong support for the first part of hypothesis 4, indicating that neophytes who hold high expectations of co-workers to look after their safety are likely to also expect high levels of safety communication, management safety behaviour, and their own safety behaviour on the job. This makes sense as neophytes who trust in co-workers to look after their safety would be likely to expect that there are policies and practices in place in the organisation that facilitate safe working behaviour, and that as such co-workers and management alike would communicate hazards and safety issues to one another. It follows from our predictions based on normative and informative compliance theories that neophytes would try to adjust their behaviour to the accepted norm, and indeed this is what neophytes expect that they will do as evidenced by the relationship between expected trust in co-workers and neophyte expectations of their own working behaviour (Moscovici, 1985; Westaby & Lowe, 2005). Additional support for hypothesis 4 is provided by a significant correlation between expected trust in co-workers and expectations of gaining familiarity (specific job related knowledge) on the job for male neophytes. This finding suggests that (for male neophytes at least) neophytes who expect that co-workers will look after their safety are likely to also expect that their team will teach them specific job related knowledge (the specific way things are done) on the

job. This finding makes sense as neophytes who trust co-workers to look out for their safety interests would expect those co-workers to familiarise them with specific team procedures and knowledge to keep them safe on the job.

Further support for hypothesis 4 is provided by significant correlations of neophytes' expected trust in management with expectations of safety communication, management safety behaviour, and co-worker behaviour for both genders. Again these findings make sense as neophytes who expect management to look after their safety would be likely to expect that management has put in practices and policies that encourage and facilitate safety in the workplace (e.g., such as an emphasis in policy on safety over speed). It would be expected that management would be responsible for a safe working environment that would trickle down and manifest as safe working behaviour for co-workers within the organisation. Additional support for hypothesis 4 is provided by the correlation between male neophytes' expected trust in management and expectations of gaining familiarity on the job. As stated before this makes sense as it would be likely that a neophyte who trusts management to look after their safety would expect that management and co-workers would inform them of specific safety practices that are relevant to their team and job role.

Unfortunately, no significant correlation between either facet of expected trust and expected willingness to take risk was discovered. This finding along with those that found links between accident exposure and expected risk, and work exposure and expected risk may indicate that the expected risk item *"I will have to take some risks in*

doing this job" may be more related to an individual's expectations of risk, than their willingness to engage in risk. This will be discussed further in the limitation section.

Limitations

A major limitation of the current study concerns the expected risk measure, what it is measuring (e.g., willingness or expectation, and for what job?) and gender differences that may affect scores on this item. The item used to measure expected risk was "I will need to take some risks in doing this job". Although the item measure for expected risk contains an expectation statement ("will need to") and a willingness statement ("I will") data such as significant correlations between the number of jobs (for female neophytes) and expected risk, and between personal accidents (for male neophytes) and expected risk indicate that the item is measuring more an individuals expectation of risk that comes with the job rather than a willingness or desire to engage in risk on the job. Further, neophytes were not made to list the job that they had in mind when answering the questionnaire, so irrespective of their safety expectations and trust expectations if they picked a risky job it is likely that they would give it a high rating on the expected risk scale (for example, even given maximum levels of trust in management a chemical worker's job is always going to be more risky than a librarian's). Given this expectation, it could be expected that males (particularly young males) may exhibit more of a risk-taking orientation than females. However, the analysis of gender differences did not find significant differences between expected risk for male and female neophytes indicating that male and female neophytes score roughly the same on the risk they expect to encounter in the workplace.

Another key limitation in the study was the limited range of schools selected. Schools sampled were all from Christchurch, New Zealand. Although a wide range of different decile schools were used to recruit participants, they were all from one city which does have a limiting effect on how widely the results from this study will generalise. Small sample size was another limitation in this study. Although the sample of 144 students would likely be sufficient for most statistical analysis, when broken down by gender the sample size for this study is relatively small and as such may have affected the results.

One other possible limitation was the use of over 80 items in the entire questionnaire, and over 30 similarly phrased items for some scales (such as own safety behaviour expectations and management safety behaviour expectations). Verbal feedback during administration from some participants indicated that the length of the questionnaire (approximately 12-15 minutes in pilot studies) was “too long” and that many items “measured the same things”. A possible improvement in future research would be to only use the reduced list of management behaviour items, and own safety behaviour expectations items that were found to load on a single factor for each scale. Other possible solutions would be to involve more expectation items that are negatively framed and discourage homogenous responding (such as the supervisor behaviour expectations questions, for which a higher score indicates that a neophyte expects their supervisor will emphasise speed over safety).

Finally, there may have been a problem with common method variance. Only one version of the questionnaire was given out to participants and no attempts to counterbalance the scales or items within scales were used. This was an oversight that limits the interpretation of the results.

Implications for organisations

This research was the first known attempt to measure newcomer safety expectations, an endeavor that should be of considerable interest to health and safety practitioners and researchers, considering the high levels of risk that newcomers (particularly young newcomers) face at work. Previously no attempts had been made to research the safety expectations that relatively inexperienced neophytes have before entering full-time employment. The current research raises some significant concerns for organisations and researchers and adds to our understanding of the reasons why young neophytes are most at risk of accident and injury when they enter work. Although the present findings cannot unequivocally validate the entire neophyte safety expectations model proposed in this thesis, some predictions made within the model were supported by strong evidence. However, it should be noted that gender differences in results painted a very different picture for male and female neophytes.

The implications of these findings for organisations recruiting new, young, and fairly inexperienced neophytes is that by and large, these neophytes are likely (due to their low experience as indicated by the findings of hypothesis 1) to have high levels of trust in their co-workers to behave safely, and to teach them specific safety related

behaviour on the job. If this trust is misplaced (for example, the team is not so safety conscious or operates in a way that is largely different from the training the neophyte receives) the neophyte may put themselves or their co-workers in danger.

The findings related to personal accident history indicate that neophytes who have experienced an accident or experience one in the workplace are likely to lose trust in management and feel more at risk on the job, which is linked with early employee turnover (Cellier, Eyrolle & Bertrand, 1995). However, counter-intuitively male neophytes who experience a personal accident are more likely than those who have not to have higher expectations of safety communication and of co-worker safety behaviour. This is a significant concern for employees because this indicates that while neophytes may feel more at risk or that they have to engage in more risk to get the job done following an accident, they also appear to expect that their team will behave more safely. Although it might follow that a team might increase their safety behaviour and communication following an accident in the same organisation, if a neophyte who has experienced an accident joins a new organisation this may mean that they over-estimate how safely their co-workers will behave and put themselves and their co-workers in harms way as a result.

The findings related to neophyte trust in co-workers and management indicate that neophytes of both genders who trust their co-workers and management are also likely to hold higher expectations regarding multiple facets of safety in the workplace (such as the expectation that co-workers will behave safely). Again this is a concern as

this study has indicated that neophytes because of their low experience with work are likely to enter an organisation with inflated expectations and trust, which means they may safeguard themselves less and put their team and themselves at risk. If trust is misplaced, and neophytes expect co-workers to act in safer way and look out for their safety more than they actually will, the neophyte may unintentionally put themselves in harms way, increasing their risk of being involved in a workplace accident. In addition, research relating to psychological contracts of safety suggests that if a neophyte feels that expectations of safety between themselves and their employer or co-workers have been breached, they may choose to voluntarily exit the organisation to restore the balance in the relationship (Bunderson, 2001; Robinson & Rosseau, 1994). This indicates that neophyte's inflated safety expectations and expectations of trust in management and co-workers pose more risk of early employee turnover than inflated general expectations alone.

A possible step employers could take to account for inflated neophyte safety expectations (particularly employers in high-risk industry such as forestry, electricity or mining) would be to provide a realistic safety preview (RSP), where during all stages of the recruitment and socialisation process the neophyte is briefed on safety issues and interacts with members of the team that they will be joining (so that they can gain specific knowledge about the way things are done within that team). An effective RSP would be likely to emphasise the value of earned trust over initial trust, and to give a realistic preview of the hazards and risks an employee of the organisation faces in their day to day work. Neophytes should be encouraged to trust their team once they become

familiar with them, and the specific equipment, procedures and work environment they operate in. Interaction with their immediate supervisor or line-manager during the recruitment process would also be beneficial in managing neophyte safety expectations.

Burt and Stevenson (2009) suggest that one way to help ensure the safety of new team members is to give them a different colour safety vest for the initial period of their employment. This is a sensible suggestion for high-risk industry where the consequences of a workplace accident may be severe and cause significant injury and impairment to an employee. A different colour safety vest may also help neophytes realise that they are considered to be higher risk by the organisation due to their limited experience with the specifics of the job, helping them moderate their self-risk appraisal to a more realistic level and therefore how much they safeguard themselves on the job.

Future research

Future research on neophyte safety expectations would be best to focus on the relationships between neophyte safety expectation facets and level of personal accident exposure. The finding that neophytes who have experienced a personal accident are likely to score higher on some safety expectations than neophytes who have not experienced an accident may be (if replicated in other studies) a major concern for organisations, especially ones where the chance of time-lost accident or injury is high. This is concerning because if following a personal accident a neophyte expects better behaviour from co-workers (or more worryingly, future co-workers!) they may do even less to

safeguard themselves and others than before, putting themselves and everyone around them at further risk of accident or injury.

Finally, future research may also focus on what happens when safety expectations are not met through a longitudinal study. Although this study looked at the effects of safety expectations generated by relatively inexperienced neophytes on their expected risk and expected trust, it did not measure the effects that inflated safety expectations have on work outcomes when a neophyte joins an organisation. Further research may look at how inflated neophyte safety expectations adjust when a neophyte joins an organisation, and how mismatches in safety expectations with reality relate to accident and incident rates on the job.

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Appendix A

Occupational Safety

(Questionnaire 1: Schools)

Thank you for considering to participate in this research. This survey is about your views on issues related to workplace safety. **Specifically it is about your JOB RELATED safety expectations.** The purpose of the research is to further our understanding of factors that influence worker safety.

The survey asks you to identify the job you would like once you have left school. If you can identify a job, please answer the questions in relation to that job. If you are not sure what job you would like, please answer the questions in relation to your general expectations about workplace safety.

Please use the following to generate your code, the first 3 letters of your mothers first name (e.g., Jane = JAN), and the first 2 letters of the month in which you were born (e.g., March = MA), code = JANMA

Your code …….

Who will see your answers?

- This survey is entirely **anonymous** and **confidential**. Please **do not** write your name on it. We guarantee that no one outside our research group will have access to your personal views.

How to complete the survey

- Please complete the survey *in relation to what you expect when you enter the workforce*
- Read each question carefully, and answer giving your *first reaction.*
- Please *answer all of the questions*.
- The usefulness of this survey depends upon the frankness and honesty with which you answer the questions.

Informed Consent

By completing this survey you are consenting to the publication of the results on the basis that no individual or organizations are identified.

If you have any questions about this research please contact Researcher Samuel Williams <email> or Associate Professor Chris Burt <phone/email>.

General Questions:

1. Your Age _____

2. You are: Male □ Female □

3. Do you have a specific job which you would like once you have left school?

   No □ If you tick No please go to question 6

   Yes □ (please give the job title) ……..……

4. Have you had any specific training or work experience for this job?

   No □ Yes □ (please give number of days …….)

5. Please indicate your expectation of **how risky your job will be** by placing a mark on the

   following 100 point scale.

   Not 0.....10…..20…..30…..40…..50…..60…..70…..80…..90…..100 Extremely
   At all Risky
   Risky

6. Have you ever had an accident at work: **Yes / No** (circle one)

7. Has a member of your immediate family ever had an accident at work: **Yes / No** (circle one)

8. Has a friend of yours ever had an accident at work: **Yes / No** (circle one)

9. Have you seen anyone at work have an accident before: **Yes / No** (circle one)

10. In total how many different jobs have you held (including work while at school) ….....

11. In total how many months have you worked for (across all the jobs you have had) .....

The remaining questions are statements about your job related safety expectations. For each statement, please circle the number which indicates the extent to which you disagree or agree.

These questions are about your expectations about **gaining specific knowledge once in the job**.

	Strongly disagree	Disagree	Neither agree/ disagree	Agree	Strongly agree
Members of my workplace will familiarise me with the specific characteristics of the equipment which they use	**1**	**2**	**3**	**4**	**5**
Members of my workplace will familiarise me with the specific characteristics of the physical environments within which they work	**1**	**2**	**3**	**4**	**5**
Members of my workplace will familiarise me with the specific operational procedures which they use	**1**	**2**	**3**	**4**	**5**
Members of my workplace will familiarise me with the specific way in which they do their job	**1**	**2**	**3**	**4**	**5**

These questions are about your expectations of how **safety is communicated** in the workplace.

	Strongly disagree	Disagree	Neither agree/ disagree	Agree	Strongly agree
Workers will discuss changes that could improve safety	**1**	**2**	**3**	**4**	**5**
Workers will give each other informal safety instruction	**1**	**2**	**3**	**4**	**5**
Workers will discuss near-hits	**1**	**2**	**3**	**4**	**5**
Workers will discuss past accidents	**1**	**2**	**3**	**4**	**5**
Workers will remind each other of the need to follow safety regulations	**1**	**2**	**3**	**4**	**5**
Workers will say a good word whenever they see a job done according to the safety rules	**1**	**2**	**3**	**4**	**5**
Workers will approach each other during work to discuss safety issues	**1**	**2**	**3**	**4**	**5**
Workers will point out hazards to co-workers	**1**	**2**	**3**	**4**	**5**
Workers will notify crew leaders of hazards	**1**	**2**	**3**	**4**	**5**
Workers will report accidents and near-misses to management	**1**	**2**	**3**	**4**	**5**

These questions are about your expectations of **your supervisor's** behaviour on the job.

	Strongly disagree	Disagree	Neither agree/ disagree	Agree	Strongly agree
As long as there is no accident, my supervisor will not care how the work is done	**1**	**2**	**3**	**4**	**5**
When pressure builds up, my supervisor will want the crew to work faster, rather than by the rules	**1**	**2**	**3**	**4**	**5**
My supervisor will only keep track of major safety problems and overlooks routine problems	**1**	**2**	**3**	**4**	**5**
As long as work remains on schedule, my supervisor will not care how this has been achieved	**1**	**2**	**3**	**4**	**5**

These questions are about your expectations of how **management will deal with safety** in the workplace.

	Strongly disagree	Disagree	Neither agree/ disagree	Agree	Strongly agree
Management will have a positive attitude towards safety	**1**	**2**	**3**	**4**	**5**
Management will be quick to respond to the safety concerns of employees	**1**	**2**	**3**	**4**	**5**
Management will take the safety ideas of employees seriously	**1**	**2**	**3**	**4**	**5**
Safety will be given a high priority in meetings and planned activities	**1**	**2**	**3**	**4**	**5**
Management will be actively involved in safety programmes	**1**	**2**	**3**	**4**	**5**
Management will take action on reports of potential hazards	**1**	**2**	**3**	**4**	**5**
Management will take the breaching of safety procedures, even when no damage has resulted, seriously	**1**	**2**	**3**	**4**	**5**
Management will be good at communicating safety issues that affect me	**1**	**2**	**3**	**4**	**5**
Management will provide personal protective equipment	**1**	**2**	**3**	**4**	**5**

Management will have visible safety documentation	**1**	**2**	**3**	**4**	**5**
Management will reward safe working behaviour	**1**	**2**	**3**	**4**	**5**
Management will maintain a safe workplace	**1**	**2**	**3**	**4**	**5**
Management will take a proactive approach to safety	**1**	**2**	**3**	**4**	**5**
Management will conduct regular safety training with all employees	**1**	**2**	**3**	**4**	**5**
Management will supply proper work equipment	**1**	**2**	**3**	**4**	**5**
Management will make sure that work demands do not compromise safety	**1**	**2**	**3**	**4**	**5**
Management will keep work equipment functioning properly	**1**	**2**	**3**	**4**	**5**
Management will ensure that safety documentation details safety procedures	**1**	**2**	**3**	**4**	**5**
Management will inform employees about the injury management process	**1**	**2**	**3**	**4**	**5**
Management will regularly update safety documentation	**1**	**2**	**3**	**4**	**5**
Management will encourage employees to report hazards and risks	**1**	**2**	**3**	**4**	**5**
Management will be familiar with the hazards and risks in my working environment	**1**	**2**	**3**	**4**	**5**
Management will discipline unsafe working behaviour	**1**	**2**	**3**	**4**	**5**
Management will supply enough resources to get the job done safely	**1**	**2**	**3**	**4**	**5**
Management will erect barriers around hazards	**1**	**2**	**3**	**4**	**5**
Management will encourage employees to report safety incidents or near misses	**1**	**2**	**3**	**4**	**5**
Management will provide safety signage that can be understood by everyone	**1**	**2**	**3**	**4**	**5**
Management will encourage safety awareness amongst employees	**1**	**2**	**3**	**4**	**5**
Management will hold regular safety meetings	**1**	**2**	**3**	**4**	**5**

Management will ensure that employees can attend safety training sessions	**1**	**2**	**3**	**4**	**5**
Management will inform employees about new safety rules	**1**	**2**	**3**	**4**	**5**
Management will communicate the organisation's safety objectives to all employees	**1**	**2**	**3**	**4**	**5**
Management will listen to employee safety concerns	**1**	**2**	**3**	**4**	**5**
Management will involve employees in safety decision making	**1**	**2**	**3**	**4**	**5**
Management will set a good example for safety behaviour	**1**	**2**	**3**	**4**	**5**
Management will carry out regular safety inspections	**1**	**2**	**3**	**4**	**5**
Management will carry out safety incident investigations to prevent incidents happening again	**1**	**2**	**3**	**4**	**5**

These questions are about your expectations about **your own** behaviour once in the job.

	Strongly disagree	Disagree	Neither agree/ disagree	Agree	Strongly agree
I will never find following safety procedures a hassle	**1**	**2**	**3**	**4**	**5**
I will report my colleagues if they break any safety rules	**1**	**2**	**3**	**4**	**5**
I will always use safety equipment, even when it is not easily available	**1**	**2**	**3**	**4**	**5**
I will need to take some risks in doing this job	**1**	**2**	**3**	**4**	**5**
I will be familiar with safety documentation	**1**	**2**	**3**	**4**	**5**
I will not take shortcuts when carrying out work processes	**1**	**2**	**3**	**4**	**5**
I will maintain a clean, safe, work environment	**1**	**2**	**3**	**4**	**5**
I will participate in safety training	**1**	**2**	**3**	**4**	**5**
I will use work equipment properly	**1**	**2**	**3**	**4**	**5**

I will inform incoming shifts or work teams of current hazards and risk	**1**	**2**	**3**	**4**	**5**
I will ensure that work demands to do not compromise safety	**1**	**2**	**3**	**4**	**5**
I will encourage co-workers to use personal protective equipment	**1**	**2**	**3**	**4**	**5**
I will report work equipment faults	**1**	**2**	**3**	**4**	**5**
I will follow safety rules	**1**	**2**	**3**	**4**	**5**
I will take responsibility for safety	**1**	**2**	**3**	**4**	**5**
I will encourage co-workers to report safety incidents or near misses	**1**	**2**	**3**	**4**	**5**
I will set an example of safe working behaviour	**1**	**2**	**3**	**4**	**5**
I will become informed about new safety rules	**1**	**2**	**3**	**4**	**5**
I will care about the safety of co-workers	**1**	**2**	**3**	**4**	**5**
I will attend safety meetings	**1**	**2**	**3**	**4**	**5**
I will comply with procedures regarding hazards and risks	**1**	**2**	**3**	**4**	**5**
I will co-operate with safety investigation teams	**1**	**2**	**3**	**4**	**5**
I will not put pressure on co-workers to break safety rules	**1**	**2**	**3**	**4**	**5**
I will be committed to safety	**1**	**2**	**3**	**4**	**5**
I will encourage co-workers to work safely	**1**	**2**	**3**	**4**	**5**
I will know what my co-workers' safety responsibilities are	**1**	**2**	**3**	**4**	**5**
I will raise safety concerns	**1**	**2**	**3**	**4**	**5**
I will make safety a priority	**1**	**2**	**3**	**4**	**5**
I will use personal protective equipment appropriately	**1**	**2**	**3**	**4**	**5**

I will take a proactive approach to safety	**1**	**2**	**3**	**4**	**5**
I will report safety incidents or near misses in an objective, factual manner	**1**	**2**	**3**	**4**	**5**
I will put in extra effort to improve the safety of the workplace	**1**	**2**	**3**	**4**	**5**
I will help my co-workers when they are working under risky or hazards conditions	**1**	**2**	**3**	**4**	**5**
I will voluntarily carry out tasks or activities that help to improve workplace safety	**1**	**2**	**3**	**4**	**5**
I trust my co-workers will do everything they can to ensure my safety	**1**	**2**	**3**	**4**	**5**
I trust management will do everything they can to ensure my safety	**1**	**2**	**3**	**4**	**5**

These questions are about your expectations of your **co-workers' behaviour** on the job.

	Strongly disagree	Disagree	Neither agree/ disagree	Agree	Strongly agree
Co-workers will warn each other when their actions are unsafe	**1**	**2**	**3**	**4**	**5**
Co-workers will assist each other with tasks to ensure safety	**1**	**2**	**3**	**4**	**5**
Co-workers will recognise each others limitations.	**1**	**2**	**3**	**4**	**5**
Co-workers will expect other workers to behave safely	**1**	**2**	**3**	**4**	**5**
Co-workers who work safely will try to emphasise it and make sure others do the same	**1**	**2**	**3**	**4**	**5**
Co-workers will immediately remove hazards if possible	**1**	**2**	**3**	**4**	**5**

These questions are about your expectations of workers **reactions when a new recruit joins the workplace**.

	Strongly disagree	Disagree	Neither agree/ disagree	Agree	Strongly agree
Workers will pay more attention to safety when a new member joins	**1**	**2**	**3**	**4**	**5**
Workers will encourage a new member to ask about safety procedures	**1**	**2**	**3**	**4**	**5**
Workers will immediately determine the safety attitudes of a new member	**1**	**2**	**3**	**4**	**5**
Workers will find out the safety history of a new member	**1**	**2**	**3**	**4**	**5**
Workers will immediately trust a new member to comply with safety procedures and policy	**1**	**2**	**3**	**4**	**5**

Thank you for taking the time to participate in this research

Parental Consent Form **Appendix B**

College of Science

Department of Psychology
Tel: <Department Telephone>
Email: <Researcher Email>

<Date>

Dear Parent,

My name is Samuel Williams and I am currently mid-way through my final year of a Masters in Industrial and Organisational Psychology at the University of Canterbury. I am conducting research on student safety expectations (both before and after they enter work), and how these expectations relate to levels of perceived risk and trust (both in co-workers and management).

I would appreciate if your son or daughter would be involved in this project, as their participation is extremely valuable and important to the research outcome.

Participation by your child would involve receiving two questionnaires; one of which is to be opened immediately and one of which is to be opened after a minimum period on the job (after about 2 months of working, if they get a job after leaving high school). This timing will allow your child to express their safety related expectations about the job they have in mind, and once in the job, allow for them to match those safety related expectations against the reality of the job.

Participation is voluntary and will be anonymous and confidential, and the two questionnaires will be matched by a code only known to the students themselves to ensure this. Questionnaires will have pre-paid and addressed post envelopes with them. They take about 10 minutes to complete each, and this research has ethics approval from the University of Canterbury Human Ethics Committee.

Your child can withdraw from the research at any time, for any reason – up until the time all data is collected for all questionnaires, and data analysis takes place. To withdraw please contact Associate Professor Christopher Burt <email/phone> or Researcher Samuel Williams <email/phone> with your 5 digit code, and your child's data will be withdrawn.

For more information please contact me any time using the email or mobile number listed above. If you would like to consent to your child participating please fill out the consent form below and return it to <*teacher name*>.

Thank you kindly for your time and consideration,

Samuel Williams

Parental Consent Form

I _____ (name of parent/guardian) give consent for my child _____ (son or daughter's name) of group _____ (group number) to participate in the "Student safety expectations in work" study run by Samuel Williams <student email> of Canterbury University.

Signed: _____ (Father/Mother/Guardian) Date: _____