What makes people tick? The marriage between safety and psychology

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Despite making significant safety improvements in the resources industry over the last 20 years, incident data suggests that there has been a recent plateauing of injury rates within Australia and around the world (Fitzgerald, 2005). There can be little doubt that mature resource business' have invested heavily in the environment (engineering advances) and practice components (safety based policies and procedures and training) of their organisations, and that this has been successful in terms of driving down injury rates. This investment in behaviour based safety programs has also produced a greater awareness of the importance of safety, an increase in safety observations and removal of barriers to safe performance, and even improved use of some behaviour based safety tools (risk assessments). According to Fitzgerald however, further improvement in safety performance is likely to lie within the true engagement and involvement of people and 'trying something new' instead of simply more of the same.

To date much of the safety literature and safety campaigns that focus on changing individual employee behaviour tend to involve education campaigns (telling someone what to do to stay safe), fear based or persuasion campaigns (what will happen to you if you get hurt), values based 'transformation' (what you should believe in regards to safety), and the very popular, behaviourally based safety approaches (removing barriers to safety and use safety observations as a key driver in change). While all of these campaigns hold at least some merit and have produced some encouraging results, the plateau continues and organisations can still be heard saying 'we have great systems, great training, and great equipment, yet people still break the rules, become complacent or take short cuts – why won't people just do what they are supposed to do'.

Spanning the study of human behaviour, at its heart psychology has been interested in examining how we can influence change and as such, may have some lessons for the field of safety:

- In 1975, Miller, Brickman & Bolen explored the power of persuasion and corrective suggestions on influencing behaviour. In studies on littering behaviours and maths performance, corrective suggestions (i.e. telling someone how they should behave) was particularly ineffective and

produced no significant change in behaviour – and in some cases, was associated with worsening performance.

- Health based research has found that advice, or telling others what to think or do, will work for some and not others – and generally only works for those people already invested in making the changes.

- Janis and Feshbach (1953) first explored the power of fear driven education campaigns on behaviour (tooth brushing). They found that when education messages were designed to elicit fear responses, subsequent behaviour change was minimal. This finding is now so consistent, that many neuroscientists have focused their energy on understanding brain responses to threat, and subsequent impacts on behaviour – generally suggesting that education and feedback needs to be done in such a way that rewards of behaviour change are emphasised and threats avoided.

- Albert Bandura sparked a cognitive behavioural revolution across psychology in the 1960's as he clearly demonstrated the importance of free will and thinking in directing behaviour – thereby showing that the foundations of behaviour based safety are incomplete, and therefore, unlikely to influence lasting change in the majority of people.

According to psychology therefore, simply doing more of the same – i.e. more education, more telling people what they really should think and do, more telling people what will happen if they break the rules, and more observation, rewards and reinforcement - is unlikely to produce the changes we are looking for in safety behaviours.

Individual Change Processes: A key to understanding the 'hearts' of our people and designing effective safety interventions

During the 1980's Prochaska and DiClemente first proposed a model of human behaviour change, known as the 'Transtheoretical' Change model, or more simply, the Stages of Change model. Initially based on work with smokers, this model has since been applied to many health related behaviours, and more recently, to injury prevention and the safety domain (e.g. Raymond, 2004; Banks, Davey & Biggs, 2007; Haslam, 2002; Kidd et al., 2003; and Slappendel, 2001). While it has undergone a number of modifications, the final version proposes 5 distinct stages through which people must pass while engaging in change. Movement through the stages is generally not linear however, and more often than not, is cyclical as individuals may relapse to previous stages until permanent change is achieved. These stages are as follows:

- *Precontemplation*: Here the individual has no intention to change. They are either unaware of, or contemplating any need for change.
- *Contemplation:* The individual has no imminent, or concrete plans to change, although they have begun to think about a need to change in the future.
- *Preparation*: There is a firm intent and plans for change. They may have even begun making small changes, and will enact more significant changes in the very near future (i.e. within the nest 30 days or so).
- *Action:* The individual has begun engaging in the new changes, although they are yet to be cemented over time.
- *Maintenance*: The individual has cemented the change and been consistently acting with the new behaviour for about 6 months.

Importantly, most of the safety initiatives described previously, and the safety tools, reinforcements or strategies we currently employ target actual behaviour modification – or, what people need to do to stay safe and enact safety behaviour changes. In doing so, they target individuals at the preparation and action stages, missing those pre-action oriented people. Trying to modify behaviour without awareness or commitment is unlikely to produce sustained behaviour change. Indeed, depending on the context and nature of the program, doing so may breed disinterest, and lead to disengagement, resentment, or forced compliance. That is, doing what ever the regulations say when under supervision, but at 2.00am, or when working or driving alone, breaking the rules, taking short cuts, and acting to 'just get the job done'. Perhaps it is time therefore, that we consciously take these stages of change into account when designing our safety programs and interventions.

To assist in some of the guess work here, research also suggests that for those pre-action individuals:

- 40% tend to be Precontemplators
- 40% tend to be Contemplators
- 20% tend to be in Preparation

(LaForge, Velicer, Richmond & Owen, 1999; DiClemente & Prochaska, 1998)

While there has been little work done looking specifically at the distribution of individuals in a work safety context, intuitively at least, we would expect

them to be similar. It would make sense therefore, that we would receive the greatest ‘bang for our safety intervention buck’ if we target most of our interventions at those falling into the precontemplation and contemplation stages at least initially, and then move onto strategies designed to assist and maintain change.

As a general rule, to assist individuals to move from precontemplation and contemplation to action we need to assist in raising awareness, and then re-evaluating the pros and cons around changing behaviour. To do this we can:

- Ask questions that encourage thinking about his or her safety behaviours, and the personal impact that these could have
- Encourage thinking about ‘what’s in it for me if I stay the same, and if I change?’
- Encourage exploration about the pros and cons of safe choices (acknowledging that cons do exist, such as a greater investment in time, energy and effort to make the safe choices)
- Provide some education and information in a timely and appropriate fashion that may facilitate greater insight into current behaviour and the consequences of such
- Facilitate a re-evaluation of the self and environment in terms of what may be driving their behaviours.

It is important to remember here that trying to tell, persuade, or provide all of the very good reasons why they should change, for people in these early stages is unlikely to produce any sustained change. Indeed, if anything, it is more likely to produce a strengthening of the current behaviour as individuals seek to defend their current position. This re-evaluation therefore, can only be driven from within, with the goal being of any effective safety program for individuals in these stages, to facilitate this internal questioning and examination of one’s goals and behaviours.

Once individuals are committed to action, our intervention efforts can then target the actual strategies that people need to employ in order to stay safe. We can assist individuals to identify those situations or conditions that promote unsafe behaviour, and develop plans for negotiating these. In doing so, we also need to examine the systems, policies and procedures, and environmental conditions and ensure that these support, and not undermine the safe behaviours.

While matching our intervention efforts to stages of change is important, in many ways it is focused on engaging the hearts of our people. That is, it is

about facilitating the motivation or drive to do something different. To be able to do this effectively however, it is essential that we also engage their minds…

The Brain and Safety: Capturing the 'Minds' of our people to design even more effective safety programs.

More than any other biological endowment, it is the brain which has allowed human beings to develop beyond their primitive forebears, and establish a unique and influential relationship with the external environment. As complex as it is, a relatively simple functional (descriptive) model can be used to describe its operation in a way that is practically useful for us when we are considering safety behaviours.

The key functions of the brain here are:

- Reticular Activating System (RAS)
- Conscious
- Subconscious

To put this in context - Every moment in time (1/18th second), approximately 1850 bits of information flood into the brain from internal and external sources. While we cannot pay attention to most of this information, it is our RAS (Reticular Activating System) that decides what we pay attention to, and what remains out of our conscious awareness. It makes this decision on the basis of whether this information is Dangerous, Important, Pleasurable or Interesting. Information that does not meet this criterion is processed subconsciously, outside of our awareness.

Contrast for a moment, the obvious implications of this information with many of the safety advertising campaigns, safety training, tool-box talks, pre-start meetings and inductions commonly on offer in many organisations today. Most are relatively boring or repetitive, and often not practical nor relevant to individuals personally. In doing so, we are setting up our interventions such that most of the information will be processed out of the individuals' conscious awareness – And we wonder why they continue to be ineffective.

Moreover, out of all of that incoming information (1850 bits) our conscious mind is limited to being able to process approximately 0.3% of the information (or between 5-9 'bits'/ chunks of information). This means that not only do we miss some information, but we miss more than 99% of the information coming into our brain. Now consider the complexity of many safety briefings, policies and procedures handbooks, and even inductions. Not only do they often fail to capture our conscious mind, the amount of information is often overwhelming for our processing capacity. Not only do safety campaigns need to be important

and interesting therefore, but our instructions, training, and procedures need to be kept short and simple – and where possible, provided in a variety of formats (i.e. spoken and written). Importantly, these limitations of the conscious mind is also one of the biological reasons why safety observations and risk assessments are important – In this context, they are not so much about policing – as about being strategies designed to help us combat the limitations of our brains and how much we information (potential hazards and risks) we miss in our environment.

Finally, given the limitations of the conscious mind, it is our subconscious (attitudes, habits, values, memories) that needs to the most attention for safety interventions to be effective. If we are operating out of habit, or from our subconscious attitudes most of the time, it is at this level that we need to focus if we are to truly evoke effective change. As we have discussed, it is not enough to simply focus on what someone does (behaviour), as mainstream current psychology would argue that what someone does, is simply a function of what they believe. To be effective therefore, we need to target the beliefs an individual holds, in the manner we described previously.

Summary

In summary therefore, we need to do something different if we want to break through the plateau in safety performance. To do so, we need to move beyond traditional education campaigns, fear driven approaches and behaviour based safety strategies, and take individual psychology more deeply into account. In doing so, we will engage the hearts of our people by matching our initiatives such that they systematically lead individuals through the stages of change, onto action and into maintenance. We will engage the minds of our people if we ensure that our initiatives work with brain biology instead of against it. And in doing these things, we will bring our safety performance to a new level.

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