



Safe habits: their role in risk assurance

Safe Habits and Risk Assurance

Purpose of this document

The link between behaviour and risk assurance is well established – how people behave is a significant risk factor. The HSE, for example, report that, “up to 90% of accidents are attributable to some form of human failures”. It is people that cause accidents, through the errors they make or through the short-cuts and deviations that they can be tempted to take. An antidote to this is the development of “safe habits” – where a habit is a behaviour that is frequently practiced almost without thinking. Another way to describe a “safe habit” is in terms of “unconscious competence”. More safe habits means less risk exposure, which in turn means less accidents. In this short document, we review the learning process through which we develop habits (good and bad) and the extent to which a focus on establishing “safe habits” can serve to protect us from unnecessary risk exposure.

Human failure

None of us are perfect. We all are prone, from time to time, to error events, and we can all be tempted to choose unsafe behaviour because we perceive the risk in so doing to be negligible. In contrast, there are often perceived to be positive benefits for engaging in such behaviour. In effect, our behaviour is always likely to be variable (influenced by the changing context, local circumstances and our subjective judgment of events) unless we make the effort to counter these tendencies. By establishing critical behaviours that are resistant to these external sources of influence and also to our susceptibility to lose focus and attention, we reduce the possibility of error or violation. Less error potential and fewer violations means greater risk assurance. In effect, safe habits serve to protect against the possibilities associated with human failure by insulating us against outside influence.

Behaviour and Learning Theory

Habits typically result from a process of behavioural learning.

Social Learning Theory describes the process through which we observe the successes significant others experience through the behaviours they choose. This is in effect “role modelling” – the tendency is for us to copy these “successful” behaviours and if our experience is also positive to add them to our behavioural repertoire. Through frequent practice, the behaviour becomes more deeply learned or established – and eventually is maintained at an almost sub-conscious level. This reflects the socialisation process we have all experienced in our early years and which leads to common-place habitual behaviours such as getting dressed, saying “thank you” when someone does something for you etc. Social Learning Theory reflects the importance of strong, consistent and visible safety leadership.

Reinforcement Theory provides us with another way of explaining the process through which habits develop. Reinforcement Theory states that our behaviour is largely a function of the consequences that we associate with that behaviour. For example, if our experience is that a particular behaviour leads to an unwanted or even unpleasant outcome, then we are unlikely (given the choice) to repeat that behaviour. Conversely, a behaviour that consistently leads to a positive outcome, and is frequently practiced, is likely to become habitual.

Reinforcement theory tells us that we can produce patterns of behaviour through the management of consequences. We can apply negative consequences to extinguish unwanted behaviour, although the use of positive consequences is often the more successful route to creating habits (as it leads to “want to” behaviour in contrast to the “have to” behaviour that is the result of a negative approach). Through the management of consequences, the aim is to create behaviours that become internalised – that is they become the behaviours of choice and supported by a sense of internal satisfaction rather than associated with consequences that derive from the

external environment. The development of habits often is represented by the transition from externally driven choices to one whereby the behaviour is more internally driven. In the context of safety this is reflected through a change from behaviours that are a function of required compliance, to the situation in which such behaviours become the “natural choice”.

Learning theory places considerable emphasis on ensuring that people are provided with the means to practice required behaviours or skills, including the necessary knowledge, and that they have frequent opportunity to engage in such practice (perhaps with further guidance and coaching). The number of repetitions required to achieve independence or competence can be considerable, and often more than we typically account for. (Providing exposure to a large number of repetitions so as to produce learning is referred to as “over-learning”).

This is a critical issue – if we want to create habits we need to ensure that people have the opportunity to experience many repetitions and that these experiences produce positive outcomes. Training is an important method through which we aim to establish safe habits, but it is not always as successful as we intend. This is often because the level of learning achieved is often insufficient and because we pay too little attention to the “transfer” process and the reinforcement of the skills / behaviours we are aiming to establish.

When a skill or action has been learnt to the extent that it requires no prompting, then this is referred to as “automaticity”. Automaticity can be regarded as another way of describing “habitual” behaviour.

Developing habits

From the above, we can identify the key conditions required for habits to develop:

1. The means to carry out the behaviour must be available (skills, knowledge, equipment etc)
2. An understanding or appreciation that the behaviour is important or functionally beneficial (rules, expectations, need requires satisfaction)
3. Frequent opportunity to engage in the behaviour (which may include prompting and coaching)
4. Positive outcome (either in terms of getting something that is valued or avoiding something unpleasant)

From this it is evident that habit formation requires:

- Awareness
- Opportunity
- Ability
- Motivation

Habits can develop through the *cultural learning process* that is a necessary feature of organisations (ie through consistent displays from significant others as part of the process through which the organisational norms become defined and established) or through *behaviour modification*. In the latter case, the emphasis is on a structured approach to changing specific behaviours. The former is always the more preferred route although there may be times when the latter is required.

Slips and Lapses

Habits will tend to lead to consistent displays of the behaviour whatever the situation. However, there are times when conditions exist to affect even habits. As already noted, we are all prone to error. Skill-based errors are associated with highly learnt

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skills or behaviours (habits). These occur when either our mental state is less than optimum (eg fatigue, stress) or when external events preoccupy and distract us (our mind is on other things). We call these *performance shaping factors*. Such errors can also be the product of a change in the environment, which is significant in relation to the appropriateness of the choice of behaviour. Through consistent exposure to a set of normal environmental conditions the danger is we take the state of consistency for granted. This can mean that we fail to detect any change in conditions for we don't expect them and therefore don't look for them. If the change in conditions is critical (even though it may be subtle), then the habitual behaviour may no longer be appropriate and increased risk may be the outcome.

Thus, whilst habits are extremely functional in terms of risk assurance, they need to be complemented by some form of dynamic risk assessment. This might almost look like a contradiction, but the fact is that it is dangerous to over-assume a universal set of conditions. **We need highly learned repertoires of behaviours (habits) the most significant of which is the use of dynamic risk assessment.** When these are both installed, we protect ourselves against many of the risks associated with our behaviour.

Situational & Exceptional Violations

As well as being prone to error, habits can also be affected by these types of violations. Situational violations occur when a specific set of conditions encourage an intentional choice to vary the usual (habitual) behaviour. The stronger the habit, the less likely will be the occurrence of situational violations. However, we do need to be aware of the likelihood of situational violations – once more dynamic risk assessment can play a part together with a culture in which open reporting and responding to identified risk issues is common-place.

Exceptional violations are rare and are often a response to critical events in which there is a required need to improvise because the situation is both novel and requires

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a rapid response. Such “quick thinking” can save lives but can also increase the risk if the logic is wrong. Once more, the use of a systematic and measured approach to dynamic risk assessment can be an aid in such situations.

Summary

The development of safe habits can act as an antidote to human failure events. Highly learned safe behaviours are resistant to changes in situation. When these are practiced across an organisation, they serve to define the safety culture of that organisation – “the way we do things round here”. Habits are learnt and reinforced both formally (eg training) and informally (role-modelling). These are rarely perfect processes and all organisations can improve their training (through greater attention to over-learning and the transfer process, and to giving attention to reinforcement activity) and modelling (through improved consistency and removing mixed-message events).

Whilst safe habits can significantly impact on levels of risk assurance, the existence of a habit does not guarantee the 100% display of that behaviour. Performance shaping factors and changes in environmental conditions can affect the behavioural selection process and render the use of the typical behaviour inappropriate. This has implications for maintaining high levels of vigilance and attention at all times both in terms of those who make choices to act in certain ways and for those who monitor the behaviours and mental states of others. In the former case, the development of a consistent approach to dynamic risk assessment will complement the development of safe habits. In the latter case the need is to develop the skills of those who monitor behaviour such that they become increasingly sensitive to any changes in mental states.

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