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CREATING A SAFETY CULTURE
WHAT ARE THE CONSEQUENCES?

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Abstract
Getting our work done safely is an ethical and financial imperative. An effective safety culture depends on the consequences for behaviour at every level of the organisation. The safety culture of an organization is not static and unchangeable, but sometimes the language of ‘culture’ can make it seem so. In this piece, we translate culture into consequences to enable the reader to measure and improve safe behaviours in their organization. In this way, positive change becomes more tangible and accessible to all employees. We provide suggestions for leaders who wish to become effective consequence providers and to tailor the consequences provided for safe behaviour throughout the organization. To conclude, we summarise a case study at a large construction project in the City of Edinburgh.

Introduction
The term “safety culture” was first used by the OECD Nuclear Agency in their 1987 report on the Chernobyl nuclear reactor disaster in 1986. Creating an effective safety culture means creating an organizational environment in which people do their tasks safely and for the right reasons (McSween, 2003). The positive consequences of creating a strong safety culture in a business are well known (see Sulzer-Azaroff & Austin, 2000, for a review). However, it is less clear how to create such a culture or to improve the existing safety culture in an organization. In fact, the term ‘culture’ suggests something inherited and difficult to change. We also do not typically consider ourselves responsible for our ‘culture’, because it is something we are ‘born into’. Sometimes, therefore, the language of culture fails to inspire positive change. In academic research, safety culture is often understood as affecting the attitudes and beliefs of employees with respect to health and safety performance (Cooper, 2000). However, focusing on attitudes in an interventions program can be problematic. Attitudes are difficult to measure, even more difficult to change and attitude change does not reliably result in behaviour change. As an alternative, we propose considering culture in terms of the consequences available for behaviour.

Culture and Consequences
All behaviour occurs under particular conditions and is followed by particular outcomes. Behavioural safety approaches (e.g., Cooper, 2001; Geller, 2001; Lees & Cummins, 2011;
McSween 2003), identify the conditions under which a behaviour occurs (the antecedent, A), describe the behaviour in observable terms (behaviour, B) and investigate the outcomes of the behaviour for the person who behaved (consequence, C). In this A-B-C analysis, it is the consequence that is the key to understanding how and why someone is behaving in a certain way. When a person reliably behaves in a certain way (e.g., in a habit), then there is usually a reliable consequence for that behaviour.

Types of consequences
In general, consequences either strengthen behaviour (e.g., make the behaviour more likely or to occur more quickly) or weaken behaviour (e.g., make the behaviour less likely or to occur more slowly). Those that strengthen a behaviour are called ‘reinforcers’ and those that weaken behaviour are called ‘punishers’. Consequences that are added to the current situation are called ‘positive’ and those that are removed are called ‘negative’. We combine these terms to label consequences. A consequence that is added to the situation and strengthens a behaviour is called a ‘positive reinforcer’ (e.g., praise for job well done for someone you respect makes you more likely to work hard the next time). A consequence that is removed from a situation and strengthens a behaviour is a ‘negative reinforcer’ (e.g., a dressing down from your boss makes wearing a hard hat more likely when she’s watching). Positive and negative punishers reduce behaviour. A ‘positive punisher’ is a consequence added to the situation (e.g., being blamed for failure on a project may discourage owning up to mistakes) and a ‘negative punisher’ is a consequence removed from the situation that reduces behaviour (e.g., cancelling anticipated bonuses for work performance may reduce work performance).

A good rule of thumb, based on years of experimental and workplace research, is that increasing positive reinforcement and decreasing dependence on other forms of consequences works best. At the level of experience, working under positive reinforcement feels like working because you want to (you “get something out of it”, the positive reinforcer) whereas working under negative reinforcement feels like working because you have to (if you don’t you’ll “get it”, the negative reinforcer). With this in mind, it is plain to see that consequences are of particular importance when it comes to creating a safety culture. All too often, however, of the three terms introduced above, antecedents, behaviour and consequences (A-B-C), it is the consequences that are taken for granted in the workplace. We ask someone to do something (A; “Wear your hard hat”), then they do it or not (B; they wear it), but we do not always provide a consequence for the behaviour (e.g., feedback on their performance). If the person does not do what we asked them, then it is tempting then to think of the person whom we asked as unreliable, when, in fact, we were unreliable. We did not provide the consequence that would encourage the person to do what we asked them.

Consequences are the key to measuring and improving the local environment and therefore the safety culture within an organization. In shorthand, “Your consequences are your culture”. Consequences create culture directly by affecting your anticipated reactions to your behaviour (“what would happen if …?”) and indirectly by shaping the behaviour of your fellow workers (“oh, that’s how we do things round here”). If you anticipate that raising a safety issue in a meeting will result in a longer meeting, no meaningful change and short shrift from your colleagues at lunch, then you will be less likely to raise the issue. If your colleagues never raise safety issues, then you will be less likely to do so. The safety culture of organization depends on the consequences for safe and unsafe behaviour. Critically, by conceptualising culture in terms of behaviour and consequences, we make it possible to see culture around us and to change it.
What would happen if…?
To measure the safety culture in your organization, consider the consequences for safe and unsafe behaviour using the question, “What would happen if…?” We’ve provided some examples below. Then, consider what type of consequence maintains or reduces the behaviour. Is it a positive/negative reinforcer or positive/negative punisher? Sometimes, you will find that consequences are in competition. Ask yourself, which consequence wins out?

What would happen if…
- you did a complex task safely and efficiently in front of a superior
- you did a complex task safely and efficiently in front of a co-worker
- you violated a safety rule in front of a superior
- you violated a safety rule in front of a co-worker
- you recommended a new safety rule
- you queried whether anyone read the safety rules
- you reported an injury
- you failed to report an injury
- you damaged a piece of equipment
- you wear all your protective safety gear
- you didn’t wear all your protective safety gear

For each of the above, you could predict a different outcome based on the type and culture of the organisation. Wearing all of your protective gear if everyone else is wearing theirs will be reinforcing whereas, wearing your protective gear when no one else is wearing theirs is likely to be punishing. The desired behaviour is of course the wearing of the protective gear however it depends upon the consequences either designed or otherwise that are delivered to the individual by the environment.

Consequences and Safety Leadership
When we think about the culture of an organisation, it is easy to forget our role in preserving the current culture. Organizational cultures persist because every individual in the organisation collaborates to preserve the culture by providing the expected consequences for behaviour that they see or infer. When we think of culture this way, opportunities for cultural change are all around us, in every workplace interaction. Leaders play a particularly important role in modifying safety culture because they have the largest say and impact in creating the environment within which everyone works. The leader is the person who provides effective consequences, whether they are passive or active, intended or unintended. A leader that deliberately designs the environment to ensure that safe behaviours are positively reinforced can create an effective respectful safety culture. Without deliberate design, there may be pockets of safe behaviour dotted around the organisation where networks of workers support it, but an organization-wide strong safety culture is highly unlikely.

Here we provide five suggestions for the leader who wishes to begin designing their organizational environment to enhance safety. In addition, a variety of books on behavioural safety are available that provide more comprehensive solutions than we can provide here (e.g., Cooper, 2001; Geller, 2001; Lees & Cummins, 2011; McSween, 2003).
1. Design the physical and operational environment using employee feedback

Each work task occurs in a particular physical context. If that context is poorly designed to facilitate the task, then the effort put in by the employee is consistently being punished while engaging in the work task. Pro-actively access anonymous employee feedback to find such tasks and improve them. For example, if your safety bulletins are too long, difficult to read, and not relevant to their task then your employees will gradually cease reading them. Can you make them shorter and more relevant?

2. Learn the downstream impact of your behaviour

When bad things happen, or leaders worry that bad things might happen, it is very tempting for leaders to intervene directly, at the coal-face. Though this is tempting, direct intervention can backfire because such interventions can undermine employees. Worse, in a rush to stop behaviour, leaders can sometimes ‘shoot from the hip’ delivering aversive consequences that punish employee behaviour. These consequences not only punish the effective behaviour that employees had been engaged in (‘bad things’ are usually a very small subset of what employees do), they also make it less likely that the leader will learn about new incidents. To be an effective leader, a leader must learn the real downstream impact of his/her behaviour by obtaining anonymous feedback. Then, improvement is possible. In general, a poor leader inadvertently delivers punishers, a successful leader deliberately delivers reinforcers.

3. Be consistent and dependable

More than a nice boss, employees like and respect a consistent and predictable boss. As a consequence provider, the more dependable you are, the less variable your employees’ behaviour will be. Consistency puts people at ease because they feel they know you, they can predict the consequences for their behaviour when you are around. Many people are inconsistent consequence providers; you can be an island of consistency for your employees.

4. Measure and reinforce safe behaviour

Step 1 helps to decrease the punishing functions of work tasks on safe behaviour and Steps 2 and 3 help to decrease the probability of providing negative consequences for employee behaviour inadvertently. At this point, it becomes possible to provide positive reinforcement for safe behaviours. The first step is to pinpoint behaviour, that is, to define it in observable terms (see Daniels & Daniels, 2004). Then establish light, preferably automatic measures of the behaviour and then reinforce appropriately. Clearly articulate easily achievable goals and gradually increase these goals to increase safe behaviour while continuing to reinforce. Coach employees to positively reinforce these behaviours too. Remember, increasing safe behaviour is much preferable to correcting unsafe behaviour. Identify safe behaviours specific to leaders. These behaviours are probably not on the frontline, but are more likely to be those behaviours that create the right environment to allow others to reduce injuries. For example, a UK construction company identified the safe behaviour of directors as blocking out time in their diary for strategic planning and communication with their subordinates.

5. Correct unsafe behaviour

Once you have devised behavioural pinpoints and clearly articulated your expectations, unsafe behaviours should decrease because they will be incompatible with the safe behaviours. If unsafe behaviours continue to occur, they are being supported by your environment. Communicate with the employee to identify the consequence is supporting the unsafe behaviour and remove it if possible. Set new expectations using supportive corrective feedback.
Case Study - Reducing Number of Utility Services Struck During Excavation

Setting
A major civil engineering project within the heart of the City of Edinburgh

Data Collection
Data were collected weekly. A safety coach visited each section of the construction site when the contractor was in the process of excavating in the street or pavement to speak to the team and tour the site. The team were asked how many services they had successfully dug around that week and how many, if any, they had damaged. These data were added to a simple graph in each facility showing the services avoided and the services damaged. This information was also fed back to a central database for monthly performance reports.

Intervention
Prior to the intervention, only the number of struck services was recorded. During the intervention, both struck services and services in the vicinity were recorded. This information was reviewed at site meetings. Positive feedback was provided for avoiding services and constructive feedback for striking services. The total number of services in the vicinity provided necessary context (i.e., how tricky the dig was).

Results
During the five weeks of recorded data, total services in the vicinity of each dig remained stable, but the number of struck services decreased considerably from 5 service strikes in the first week to 1 in the final week. The proportion of services struck decreased to an even greater extent from 45% to 7%.

![Services Avoided and Struck](image)

Figure 1: Number of Utility Services struck and avoided during 5 weeks of Behavioural Safety Intervention

Workers reported that in the past they had only been given attention when they damaged services but now they were being recognised for their efforts when avoiding services and specifically for the proportionate amount of safe digging that they were doing.
Conclusion

In this paper, we proposed deconstructing culture into the consequences for behaviour in the workplace. This approach makes culture tractable and facilitates real organizational change by highlighting opportunities for change in every interaction. This approach is useful for safety culture but it is also a useful approach to consider an organization’s culture in the broader sense. In everyday terms, an organization’s culture is the ‘way we do things around here’ (my behaviour and that of those around me) and it is created and maintained by “what really matters around here” (the consequences for my behaviour). We use the phrase “really matters” because safety culture competes with and is influenced by other dominant cultural themes of corporate culture. That is, there are always competing consequences available for behaviour. For instance, behaving safely may limit productivity. If employees know that “what really matters around here” is productivity (i.e., those behaviours are positively or negatively reinforced), then safety concerns will take a backseat when they conflict with productivity concerns. As Lees and Cummins (2011) point out, “Do this by this date but do it safely” is different from “Do this safely but do it by this date!”

Leadership is required to design a safe and productive environment. Leaders, especially supervisors, play an essential role as providers of workplace consequences and by coaching employees to reinforce safe behaviours. Lees and Cummins (2011) point out that safety cannot be a competing priority, it must be a value, and it must be the foundation on which all work practices are based. Saying that safety is a priority goes against all the day-to-day-data that show that many other issues are discussed more often. Priorities change, but values remain.

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