

Safety Theater:

Where your accidents hide in the green

By 2019, just before COVID hit, our research in the Safety Science Innovation Lab at Griffith University had produced an apparently startling finding. The finding seemed consistent among the fatalities whose aftermath were involved in, one way or another. They all came from the same place that had consistently produced the organization's successes. Had you been collecting and counting injuries or incidents—you would have completely missed the fatality potential. Indeed, the idea that we should be looking among our successes for how things could go terribly wrong—or that the sheer way of producing successes could even be responsible for that—might be consistent with Safety II's insistence that we understand why things go well. But should we be penetrating why things go well because that is also how things go awfully wrong?

I wrote to some colleagues with the idea that success itself can be a breeding ground for future failures, and the suggestion that fatalities hide in the green simmered on. The problem with presenting empirical proof for this, as Scott Sagan (1994) put it, is that we select our case evidence on the dependent variable. That is, we typically point to cases where accidents, indeed fatalities, 'suddenly' happened after long periods of apparently

safe work without mishaps (e.g., CSB., 2007; Hopkins, 2010). We do this, too, when selecting accidents that followed a long period on a slippery slope of unshakable, undeniable incidents and potential fatality events (e.g., Vaughan, 2005). This makes either claim tenuous. Either success and failure-free performance predicts accidents; or a persistent throb of smaller failures predicts accidents. Case evidence selected on the dependent variable (i.e. the outcome, the accident) can't rule on the truth value of either claim.

Gold-standard evidence in the form of a randomized controlled trial (RCT) is out of the question, too: we cannot randomly assign people to experience accidents—ethically or practically. Closest to a controlled study comes Sherratt's and Dainty's of the UK construction industry in the 2010s. They tracked regulatory accident data over a 4-year period, together with an analysis of major contractors' safety approaches. The study revealed that working on a project subject to a 'Zero Harm' safety policy or program is associated with a slight increase in the likelihood of a serious life-changing accident or fatality (Sherratt & Dainty, 2017). Even though the companies which suffered more fatalities tended to have a Zero Harm program, they also reported more serious injuries and incidents to the regulator—of the kind that cannot be 'hidden' by calling them something else through 'case management' or blaming them on a contractor for them to count in *their* statistics. Whereas the embrace of 'Zero Harm' may evince a belief that safety (as measured by the absence of negative events) predicts more safety (no accidents or fatalities), having such a program was associated with less safety and more fatalities. This,

however, still holds incidents and injuries up as predictive of accidents and fatalities, giving lie to the claim that fatalities hide in the green.

At stake for some is the status of Heinrich's triangle and the utility of drawing on historical incident data to predict accidents and fatalities (Rebbit, 2014). Here, too, it is possible to find empirical proof either way. Rigorous longitudinal studies with sizable data sets (e.g., Bellamy, 2015; Yorio & Moore, 2018) offer qualified support for the idea: fatalities can be predicted by various shades (severities) of red; others (Barnett & Wang, 2000; Saloniemi & Oksanen, 1998) show the opposite: fatalities hide in the green (i.e. in the absence of incidents of any severity). However serious the undertaking or large the data set, none of these studies is able to escape statistical confounds nor the wide definitional variances for 'incident' and 'severity' that come from using diverse real-world data. Recently, Marshall and colleagues (2018) showed how Heinrich wasn't statistically valid for 50,000 companies over a 28-month period, but found any discrepancies to be small enough to conclude with the caution that the occurrence of minor incidents is still a useful signal.

The question here, then, must be the opposite: is the *absence* of incidents a useful signal, and if so, in what way(s)? In other words, should you (increasingly) worry about your safety performance if nothing has happened for a while? To answer, and to add something useful to our knowledge and professional guidance, this article assesses theoretical propositions about the psychological, cultural and organizational mechanisms that might explain how a lack of incidents can portend or produce an accident. A subtle difference exists between a

lack of incidents driven by active repression of bad news, and a genuine lack of incidents—yet a growing accident potential—produced by the very means of creating operational success. The article covers both. Each can promote, or not, concern about a stretch of incident-free performance. It concludes with what to ask, look for and do if you are.

Safety Theater

‘Safety theater’ is a term I’d like to introduce. It is the performance of work when subject to some form of surveillance (inspection, management visit, supervisor looking on) in such a way as to demonstrate compliance. During the performance of ‘safety theater,’ informal ways of working tend to retreat from view (cf. McDonald et al., 2002). It presents an image of ‘work-as-imagined,’ only to revert to ‘work-as-done’ when left alone to get on with things (Hollnagel, 2012). Safety theater points to an inauthentic relationship between the design and execution of work (and the people in roles behind these two), as caricatured in Taylorism where planners and designers of work were assumed to be smart, and the worker (who just needed to execute) dumb (Taylor, 1911). Behavioral safety has been implicated as handmaiden to this approach (Frederick & Lessin, 2000; Hale, 1990; Hopkins, 2006). The misreading of what produces safety (understanding of and compliance with safety rules) is really a misapprehension of everyday work—of what it takes to get the job done—typically under goal conflicts, changing circumstances and limited resources, and where using

procedures doesn't necessarily mean following them (Carim et al., 2016; Havinga et al., 2018; Suchman, 1987).

This can get replicated when an organization lacks appetite for bad news, evincing an unwillingness to accept evidence of non-conformances or incidents or even punishing workers who come with bad news (e.g., Goglia, 2015). Sometimes the embrace of a 'zero harm' policy or aspiration is a driver, as is any incentive system organized around the reduction or absence of negative events (Hopkins, 2015). Such bonus systems have earlier been characterized as 'blood money' (Hopkins, 1984). The link between a lack of incidents and the possibility of having an accident in this case is fairly intuitive: after all, a safety culture is a culture that allows the boss to hear bad news (Dekker, 2006). High-reliability theory, at its inception, highlighted the need to learn from 'smaller' mishaps and incidents to foresee and forestall bigger ones (without necessarily explicating the mechanisms by which the translation from small to big might occur) (Rochlin et al., 1987).

In fact, this position necessarily assumes some kind of causal equivalence—even if such causal convergence comes from far 'upstream' somewhere in the administrative, governance or regulatory blunt end of the organization or industry. That is, the incidents that emanate from how business is done—but which get ignored, repressed, underreported, or case-managed into statistical oblivion—would point to similar kinds of organizational priorities, decisions and tradeoffs that will not only keep producing more of the same incidents, but which might eventually produce or allow larger-scale accidents. In

other words, even though for example process-safety accidents are not predicted by slips, trips and falls (nor prevented by their absence or underreporting), the mechanisms that cause the production and underreporting of incidents and process-safety accidents tell a common managerial or organizational-cultural story. This can encompass a focus on production over all else which affects both macro- and micro-level sensemaking (Barton & Sutcliffe, 2009), an unwillingness to engage with expertise—whether frontline workers (Dekker & Conklin, 2022) or expert engineers (Guerlain et al., 1996)—and a preoccupation with reducing individual data-points (incidents) over an ability to discern the kinds of connections and complex interactions that drive (process-safety) accidents (Downer, 2013; Macza, 2008; Perrow, 1984).

An explanation which does not require causal equivalence is one that relies on distraction and decoy. This has been implied in for example the Macondo and Texas City process safety accidents—with a company, and an industry, pretty much obsessed with reducing countable lost-time injuries and smaller incidents. Safety had devolved into a bureaucratic accountability and an expectation of demonstrating ever-lower numbers of lost-time events up the hierarchy, all the way to the board and shareholders (Graham et al., 2011). Turner (1978) described this as ‘decoy phenomena,’ sucking up managerial and board attention at the (dire) expense of engineering and process-safety issues, while simultaneously lulling them into the belief that safety was under control (Elkind et al., 2011).

Accidents produced by operational success

Max Weber (1922) warned that systems of social organization produce and contain their own 'dark side' (Vaughan, 1999); the seeds of their demise germinate and grow from within. Merton (1936) applied this to organizations and their performance, safety or survival, observing that any system of purposive social action inevitably generates secondary consequences that run counter to its objectives. Man-made disaster theory (Turner, 1978) concretized this by tracing how accidents piggyback opportunistically on systems of efficient production (Pidgeon & O'Leary, 2000). If you're really good (cheap, efficient) at producing something, it is likely that accidents follow the same pathway as the one along which you consolidated and refined your operational success.

This happens at any scale. Globally, for instance, the same factors that account for an abundance of fast-fashion clothing in the West—weak governance and oversight, murky supply chains, cheap labor—are the ingredients of massive accidents in that industry (e.g. Rana Plaza with worker 1,100 deaths) (Blanton & Peksen, 2018; Park, 2011). Success, in other words, breeds failure. At a company level, Southwest Airlines kept using outdated scheduling systems that required minimal upfront investment. With a winter weather event as trigger, disruptions cascaded and the airline went 'solid' as the system was unable to keep track of which crew was where. The airline suffered a massive scheduling infarction. Incurring decades of technical debt had allowed for rapid expansion and cheap fares—until

the debt came due (Tufekci, 2022). Such examples are of course rife, from lean staffing in call centers to just-in-time manufacturing to optimized turnaround times in commercial aviation (Hartley, 2011). Reducing it even further to the protective equipment worn by individual workers, there is ample anecdotal and research evidence that protective barriers to ensure safety become the opportunistic sites of risk and failure (e.g., Gao et al., 2021; Reason, 1997; Shibley, 2016; Wong et al., 1991).

The examples above suggest that accidents hiding in your success likely amounts to a universal, even trivial fact. For an operational business in the middle of things under cost- and efficiency pressures in a competitive environment, it presents as a seductive feedback mechanism. More operational success not only means more operational success (which is visible). It also means more marginal erosion and thus an escalating flirtation with accident potential (which is invisible). Accident potential grows in the absence of safety-related evidence from the point of risk where safety-critical work gets done (Rasmussen & Batstone, 1989). Declines in safety typically lag behind a gradual undermining of an organization's adaptive capacity through continued operational success. But its growing brittleness will eventually be exposed by challenges and changes that take the organization outside its known (and designed-for) boundaries. Superficially, or apparently, an organization can be reliable, or even highly reliable—if anything because of the sheer low probability of failure or extinction events.

Escaping from ‘risk secrecy’

The prescription to counter ‘risk secrecy’ is to interrogate your success (or, in audit-speak, mistrust the green, and take action on that mistrust). If you don’t understand what is responsible for your operational success (including an absence of safety-related signals), you probably don’t know what sacrifices are being made on a daily basis to ensure your continued success. Of course, celebrate an absence of incidents, but then ask critically how it can be so. As Wildavsky (1988) quipped, ‘richer is safer,’ and Rasmussen suggested years ago, it could be because you are doing things too expensively and too slowly (and thus very safely). Although that is unlikely. You may not be hearing about your incidents because your organization is putting active downward pressure on people’s willingness to share and disclose, or because you don’t know what to look for or where to look.

Rasmussen (1997) suggested making the cost of safety visible by giving organizational decision makers a recognizable sense of what they are trading off when pursuing greater efficiency gains.

And how can you engage other experts—from floor-level workers (Dekker & Conklin, 2022) to expert engineers—from your organization? The managerial poise to escape from these dilemmas of ‘risk secrecy’ (Dekker & Pitzer, 2016) is to forego one’s quest for perfection, and instead fostering integrity: an openness and honesty about what is (not) working and whose obligation it is to start fixing that. This may, at some point, need to involve ditching ‘zero’ in order to set people up for honesty and openness.

Such a commitment to start hearing bad news is foremost a moral, even empathetic, one. To learn about how work actually gets done, and appreciate the dynamic safety sacrifices and tradeoffs that get made there all the time (Rasmussen, 1997), the ability to put oneself in the perspective of those who carry out the work is critical. As has long been argued (Hirschman, 1970; Janis, 1982; Turner, 2010), the encouragement of diverse, divergent and dissenting voices is crucial for picking up on safety-related signals that would otherwise escape one's own awareness and understanding of the operational state of affairs (Edmondson, 2019; Ge, 2020; Morrison & Milliken, 2003). This is particularly important in light of continuous operational finetuning and 'normalization' of deviance (Starbuck & Milliken, 1988; Vaughan, 2005) and the possibility of drifting into failure (Dekker, 2011) if signals are not picked up by someone who looks at things differently (Feynman, 1988).

Questions during walkarounds, supervision or other kinds of engagements could altogether avoid judgment of how work is done, and perhaps not mention anything 'safety-related.' Research shows that this will come up anyway if keen interest is shown in work (Havinga et al., 2018). For example:

- I notice that... Help me understand why it makes (more) sense to work this way.
- What are the obstacles we're putting in your way to getting things done?
- What is the stupidest thing we're asking you to comply with to work here?

Questions such as these represent an invitation, instead of an assessment or judgment. They can begin breaking through your organization's risk secrecy and learning disabilities. While operational success is often celebrated, it must be critically examined. An incident-free record may not guarantee safety but could signal hidden vulnerabilities. Leaders must adopt a mindset of proactive inquiry, celebrating their successes, but questioning how they are achieved and what sacrifices might have been made along the way.

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