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Towards a "Rescue Ready" Mindset: Can Lifeguard Teams Learn Lessons from the Attributes of Chronic Unease?

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Cover Page Footnote

Abstract

Highly Reliable Organisations (HROs) are safety-centric organisations that operate in complex environments alongside risky technologies and processes. There is a high risk of catastrophe and error in these settings, the consequences of which may result in loss of life, financial cost, and damage to the environment. "Chronic unease" is a concept originally adopted by Royal Dutch Shell describing a mindset that has five predictable attributes that contribute to an individual's and organisational safety culture. The authors of this paper describe the attributes of chronic unease in the context of lifeguard operations. A case study of a dangerous and dynamic rescue situation from a popular New Zealand beach is presented and analysed wearing a 'cloak of chronic unease' to draw upon the attributes of this concept and to present a discussion about how lifeguards, their managers, and leaders may learn valuable lessons from HROs to develop safer operations by fostering a similar mindset we have dubbed: "The Rescue-Ready" mindset.

Keywords: lifeguarding, lifeguard safety, rescue, human factors, error, risk management, highly reliable organisations, rescue-ready, chronic unease

Introduction

Drowning is a leading cause of preventable mortality and morbidity globally in both high income (HIC) and low- and medium-income countries (LMIC) (WHO, 2015). Lifeguarding is a complex task undertaken in an uncontrolled environment with multiple risks including potential harm to the rescuer, harm to those being supervised (if things go wrong), requiring high levels of vigilance, skill, and a constant state of readiness. Most of the time, lifeguards are engaged in surveillance of in-water patrons requiring complex decision-making processes based on mostly incomplete information. Occasionally, these decisions are made under duress where the stakes are high and limited resources available to deal with a crisis or emergency. Failures detecting drowning behaviour or failure to rescue a drowning victim in a timely manner may result in tragedy as the process of drowning can occur within seconds to minutes.

In this paper, we discuss the lessons learnt from Highly Reliable Organisations (HROs) that encourage a concept called "Chronic Unease" as a platform for developing a robust safety culture. These lessons may be applicable for lifeguards, lifeguard team leaders, or managers of lifeguard services as a way of striving to reduce systemic failure, errors, and accidents by frontline lifeguards, and may provide a useful 'world view' to adopt by operational lifeguards.

What is chronic unease?

"Chronic unease refers to the experience of discomfort and concern about the management of risks. It is a healthy scepticism about one's own decisions and the risks that are inherent in work environments" (Fruhen, 2015). Chronic

unease is a concept originally developed by the oil and gas industry (Shell Contractor, 2019) as a feature of working towards the goal of zero harm within their industry. When things go wrong on an oil drilling rig, they typically go spectacularly wrong and result in catastrophic harm, including massive loss of life, environmental damage, and significant financial costs. While chronic unease is primarily a state that typically influences executives and senior management, safety experts researching this area propose that an organisation (at every level from worker to senior managers), in a constant state of unease, will critically support the organisation's safety record. Chronic unease is a hallmark of all HROs (Fruhen, 2015).

Chronic unease is a mindset typically adopted by senior managers but permeates all levels in an organisation with a highly robust safety culture. It fosters a healthy world view that:

1. Mentally projects the development of a situation into the future based on its current state.
2. Does not expect something to be wrong but is constantly on guard and prepared when things do go wrong.
3. Constantly looks for weak signals that may indicate that there is a hole in the system, and even small events, no matter how minor, could lead to greater failure, so action is taken immediately versus being delayed.
4. Assumes nothing, questions assumptions, and does not jump to conclusions.
5. Constantly worries (healthily) about safety and risk.

These five attributes of chronic unease will be explored within the context of lifeguarding, and the application of this world view will be discussed with examples provided. Given the complexity of the tasks of lifeguarding, and in some cases the high-risk environments they operate in (coupled with the high potential for error that may result in catastrophe), we propose lifeguard services can improve their level of safety by fostering the attributes of chronic unease at all levels of operations.

What are Highly Reliable Organisations (HROs)?
Highly Reliable Organisations is a term first described in the 1990s for organisations that are recognised for avoiding catastrophic accidents where accidents are expected due to the high-risk activity and complexity of the tasks they complete (Roberts, 1990). They have managed safety and risk over a long period of time in high-risk contexts and often operate in difficult social and political environments, utilise risky technologies with a high potential for error, and the scale of possible consequences from failure precludes experimentation with safety systems. HROs are diverse and not limited to industry. A wide and diverse range of HROs and their systems have been studied and identified. These range from air traffic control systems, fire command systems (Bigley, 2001), and some high-risk medical treatment facilities such as paediatric intensive care units (Madsen, 2006) .

HROs have developed robust safety cultures, and think and act about error, accidents, and near-misses quite differently to other organisations. They encourage mindful reporting, investigate root causes, and continually strive for zero harm to personnel, the environment, and assets. "HROs use mindful organising for the unexpected as well as the expected" (Weick K, 2007).

A Case Study as a Basis for Examining the Utility of Chronic Unease Attributes

We present a case study of an actual incident involving a lifeguard team working at a popular surf beach on Auckland's West Coast in New Zealand. For reasons of confidentiality, names and dates have been changed, but the essential facts surrounding the events remain intact.

Background

These events occurred on an outgoing tide on a crowded (approximately 1,500 patrons) beach between the flagged patrol area (in New Zealand, the recommended swimming area where intensive lifeguard surveillance occurs is marked with red and yellow flags). The surf was large (approximately 2.0-2.5m), and there was a considerable inshore drift towards two large fixed rips and both ends of the beach (the beach is approximately 800m long). The lifeguard team consisted of six lifeguards; the team leader was highly experienced with over twenty years' experience. The rest of the team were similarly skilled and experienced except for one lifeguard who was a foreign national on an international exchange programme. The team leader was prepared for numerous eventualities including preparing an extra Inflatable Rescue Boat (IRB), discussing the potential need for additional resources from a neighbouring beach, and setting up a very intensive area for lifeguard surveillance.

Events

At approximately 11.30am, the surf size increased, and the power of the inshore drift increased accordingly. A group of four swimmers were suddenly swept into a hole, then continued to drift rapidly into an extremely dangerous area close to rocks. The lifeguards lost sight of three of the swimmers, and the team went into crisis mode to deal with a rapidly dynamic and dangerous situation. The patrolled area was closed, and other beach users ordered from the water as the lifeguard team dealt with the crisis. All persons were eventually rescued; one swimmer was found submerged. He was retrieved from the water and resuscitation was commenced on the beach. He was transported to hospital by a rescue helicopter and made a full recovery without any long-term neurological consequences. During the incident, information was received by members of the public of a possible sighting of one missing person early in the search in a location at the other end of the beach causing doubt as to the appropriateness of initial search efforts (this was later proved to be a 'red herring' and search efforts were successful as the team leader elected to ignore the reliability of the

report). Several more rescues occurred throughout the day after the patrolled area was re-opened.

Commentary

These events highlight how quickly lifeguard operations can shift from routine-mode to crisis-mode. In the final analysis, this team did a remarkable job under trying circumstances. In the next section, we highlight how the attributes of chronic unease may be useful in preparing and dealing with such situations. In the analysis of this case study, we do not criticise the actions of the team; rather we use this case as an example to highlight the use of the attributes of chronic unease in the real world. Adopting a world view that fosters the attributes of chronic unease will not prevent such crisis from occurring per se but may help build resiliency in a team to prevent and deal with such situations. We view this situation as wearing a 'cloak of chronic unease' to see what thought processes and actions might augment how we manage human and physical resources to prepare for crises like these.

Attributes of Chronic Unease

Safety Imagination. *The ability to mentally project the development of a situation into the future based on its current state.* The thinking here is that in a state of chronic unease, the lifeguard will gather as much intelligence about the situation at hand based on good evidence. Good evidence is data that can be validated such as tide times, observation of actual not assumed hazards, and aspects of the environment such as the actual surf size, velocity of rips and drift, and water temperature. A lifeguard wearing a cloak of chronic unease will assume their perception of the situation may be flawed or incomplete. To ensure their intelligence is accurate, they will 'cross-check' their world view with others in the team.

After gathering data to construct the current state of affairs, the lifeguard will then speculate on the potential situation that *may* develop. This is the crux of safety imagination. It is the ability to look beyond the here and now and mentally project into the future using pre-existing knowledge, skills and experience, and the combined thinking power of the team. An example of dialogue a lifeguard team leader might use exemplifying a safety imagination might sound like: *"OK team, I'm concerned that the outgoing tide may produce unsafe conditions, so we need to be prepared for extra vigilance on the turn of the tide."* By declaring a possible future, the team is now aware of an unease about safety in the future. Disaster may not strike, but if it does, it is partially expected and therefore easier to deal with.

In the case study, the lifeguard team leader did in-fact pre-empt (using safety imagination) many aspects of the clinical management of the victim who submerged. As soon as the three victims went missing, the team leader closed the beach (preventing further task overloading), immediately notified the rescue

helicopter, and asked for further assistance from a neighbouring beach. The swimmers had not been located at this time, so there was no way of knowing medical aid was required, but the leader projected a worst-case scenario and made preparations. All 'just in case.' These pre-emptive actions saved lives.

Safety imagination can be used by all lifeguards on a daily basis. Its use need not only be used for major events; in fact, when safety imagination is used, all events (even minor ones) are viewed as potential initiators of significant future events, so are dealt with immediately, thereby interrupting a potential cascade or escalation. An example of this would be the lifeguard who is watching a small child slowly edge closer and closer to a deep hole. Based on the current state, all may seem well, but if the future is projected, a potential emergency exists. Better to act now before events cascade into a crisis. For experienced lifeguards, reading this may seem patronising. After all, "isn't that what we do?" However, maintaining a constant state of safety imagination isn't as easy as it sounds. It is cognitively draining and requires a constant internal dialogue to maintain. It is when we become complacent that safety imagination fades, and relatively minor events can creep through unnoticed and become significant events.

Pessimism. *A personality trait reflecting a tendency to resist complacency and to anticipate failure*. Are you someone who has a little voice in their head that runs scripts like: *"No. Can't be that bad, he'll be fine, everything is O.K.,"* despite compelling evidence to the contrary? There are a number of scripts that can run contrary to the reality of any given situation. These are complex cognitive errors beyond the scope of this article. Suffice to say, a personality trait that resists the urge to dismiss weak signals (and operate as though 'everything is OK') when events are unravelling takes discipline and practice. Conversely, a script that runs closer to: *"Everything seems OK right now, but conditions are worsening so it might all turn bad at any moment!"* is a script underpinned by healthy pessimism. This trait needs to be a habit and is dominant in HROs (Weick, 2007).

In this case study, the lifeguard team leader displays a healthy sense of pessimism. Right from the outset, he was clearly anxious about conditions, the lack of resources to deal with challenging conditions, and his experience led him to adopt a very pessimistic, vigilant and intensive patrolled area (the flags were very close together to contain beach users in an area of high surveillance). On the day, he had prepared an extra IRB (beyond what is normally prepared), and had it on standby, just in case. This is healthy pessimism in action. There were no strong signals that things could go wrong and require another IRB, but there were weak signals there was potential for its need, so action was taken.

Is there anything wrong with being pessimistic, resisting the urge to be complacent and therefore taking steps to anticipate failure? It's all about context

and intensity. Being overly pessimistic about every situation in every area of one's life can lead to cognitive distortions (catastrophising, for example) that can be pathological. There are many types of cognitive distortions; catastrophising (one type) distorts one's view of the everyday world disproportionately and irrationally and can lead to an individual disengaging with everyday activities or produce anxiety when dealing with relatively minor problems (Burns, 1989) . A catastrophising script might sound like: *"Why bother, people always need rescuing, and they always get into trouble when there's surf. We always end up doing rescues."* Distortions like these are 'all or nothing' thinking versus a reasoned decision to consider catastrophe possible but remain anchored in the reality that it doesn't always happen or is guaranteed.

If you've developed the habit of pessimism, this trait runs subconsciously in the background of thought and becomes dominant when you're receiving weak signals that something is wrong. Experienced effective lifeguards and team leaders naturally do this most of the time, and it largely goes unnoticed by others, often surprising others when things do go wrong that the team leader seems to possess savant-like qualities in predicting future events and an ability to be 'ahead of the eight-ball.' It's no accident. They are, and perhaps unaware that their dominant behaviour is to be cautiously pessimistic. To our knowledge, no research has confirmed this underlying trait is dominant amongst experienced lifeguards. Research into this would be useful to potentially identify leaders and lifeguards who have this trait, why they have this trait, and how to train lifeguards to develop this trait as it is desirable and needs fostering.

A lifeguard may also take a healthy dose of pessimism when planning a difficult rescue. Sure, we all like to think we can perform amazing feats of IRB driving or surf swimming in difficult conditions. A healthy dose of pessimistic self-questioning might scale back your immediate expectations of what you *think* you should do to a more realistic position of what you *can* do in reality. A healthy dose of pessimism may prevent cavalier actions. Pessimistic questions might include:

"But when was the last time I did a rescue in such large surf? Do I have skilled help to assist? What if it all goes wrong? Where is my back-up if I get into difficulty? There's only one IRB available and no other experienced drivers. Is there a better, safer way? Perhaps a jet-ski or helicopter?"

Confidence and competence is a double-edged sword. On one level, a certain level of confidence in one's competence is desirable. It is a basic human need to avoid feelings of helplessness and the ability to influence the world around us according to our own goals. "Our internal assessment of competence is subjective either as a feeling of measuring up to the situation, or as a feeling of helplessness and fear, as the case may be." (St. Pierre, 2008). Research in

similar industries such as clinical medicine identifies that confidence in (our own) skills or capabilities is often misleading, and highly subjective, especially in complex situations. For example, if a clinician *overestimates* their ability to cope with an emergency, they are "more likely to take risks because of a wrong feeling of being up to the task," whereas if a clinician *underestimates* their competence they will tend to "act defensively and refrain from taking helpful necessary steps." (St. Pierre, 2008).

A moral hazard exists when lifeguards either over or under-estimate their competence when faced with an emergency. Over-estimation might lead to unnecessary risks being taken in a hazardous environment. Under-estimation might lead to circumstances where delayed or no action occurs where it is absolutely needed. The attribute of pessimism is, therefore, not only useful for being prepared for potential catastrophe but may also be a useful mind-trait to keep competence in perspective and balance.

Vigilance. *The ability to notice and identify (weak) signals of risks in the environment*. Vigilance is a highly desirable trait for lifeguards to possess. Watching in-water patrons constantly is physically and cognitively demanding. Dr. Tom Griffiths (the inventor of the five-minute scanning strategy) states: "constant vigilant supervision is an oxymoron" (Griffiths, 2011).

It is not often appreciated that there are a vast number of variables that influence a lifeguard's level of vigilance, and therefore, ability to detect drowning behaviour. Even in optimum circumstances where a lifeguard is highly vigilant, he or she is prone to errors originating from a wide range of host, cognitive, physiological and experiential factors, as well as a wide range of environmental factors. Maintaining vigilance to the task of surveillance is another double-edged sword. While engaged in surveillance, a lifeguard's perception is narrowed to the target area so as a result, and in a wider sense, situational awareness diminishes. A lifeguard who attempts to maintain overall situational awareness, complete other tasks or assignments, and pay a high degree of attention to surveillance will compromise their effectiveness at all of them. It is for this reason that a lifeguard should always conduct each task independently, never both (or all) at the same time. When conducting surveillance, they should only be involved in surveillance due to the risk of becoming distracted and then fall prey to inattentional blindness (a phenomenon where perception is impaired due to distraction).

Research conducted by Page et al. has identified that a lifeguard's experience is the only reliable independent variable influencing detection of drowning behaviour in a simulated drowning (Page, 2011). A detailed analysis and explanation of errors is beyond the scope of this paper, however, a basic understanding that vigilance alone does not guarantee successful detection of drowning behaviour is sufficient to examine the attribute of vigilance as it pertains to chronic unease.

In the context of chronic unease, looking for weak signals goes beyond scanning for overt signs of distress or drowning behaviour. These signals are strong, not weak. Looking for weak signals is about looking for problems that when seen in isolation may have little if any immediate consequence, but if allowed to persist or go unaddressed may escalate into a bigger problem or influence in an unexpected way the outcome of an entirely different problem by becoming a latent condition.

In our case study, the team leader divided tasks so no lifeguard was conducting surveillance alone (two lifeguards reduce the likelihood of a single point of failure) and maintained situational awareness by ensuring he remained 'task-free'. He was then able to detect weak signals such as the tidal changes, a subtle increase in surf size, and an increase in rip current velocity that may have otherwise remained unnoticed by the team as a whole as other lifeguard's fields of perception are narrowed by conducting high-intensity surveillance. Overall, these changes in the environmental conditions were not drastic changes; no single signal meant much, but when combined, signalled a more sinister situation developing. Maintaining vigilance (particularly good situational awareness) is a good antidote for preventing a perception error known as *change blindness*. In change blindness, the observer may miss signals because the changes (a new or changed stimulus) within the field of perception change slowly and go unnoticed (Rensink, O'Regan, & Clark, 1997).

Vigilance, when combined with projecting a potential future using safety imagination, identifies weak signals that can trigger further unease. Using the attributes of chronic unease, HROs reduce accidents and errors by taking action to avert (by fixing the condition) or plan for failure. Reporting relatively minor issues (hazards and risks) is encouraged and rewarded. In environments such as these, potential unexpected events or conditions are eliminated, isolated or minimised (transformed) before they manifest further. Corrective actions are transformed from urgent time-critical responses into planned responses, reducing cognitive stressors, workload, and should it occur, expediting crisis resolution.

Worry. *A tendency to worry about risk and safety.* Let's be clear. The workplace is no fun if everyone is worried all the time, and in the extreme, worry can produce pathology. A tendency to worry about risk and safety (in a measured way) is, however, the counterbalance to complacency, the basic tenet of applying the attributes of chronic unease. HROs tend to place raising concerns about risk and safety amongst teams as a high priority, and this underpins many operational decisions. Organisations with a less safety-centric focus often consider risk and safety as an afterthought or a separate process. In our case study, the level of worry and concern for risk and safety is evidenced by the team leader's actions, such as maintaining an intensive patrolled area and pre-preparing extra rescue assets. An interview with the team leader, in this

case, reveals an underlying healthy predisposition with worry about risk and safety versus complacency.

> *"I was worried at the beginning of the day and knew it was going to be busy."*
> *"When things turned bad, I had already thought through my plan."*
> *"I worried about the flags (the patrolled area) so focused on keeping those as tight as possible."*
> *"I didn't have a decent break because I was worried things could turn to sh^% at any moment."*
> *"I had already discussed with x patrol (neighbouring beach) the plan to back us up if it turned to custard."*

As discussed, lifeguard work is complex and often undertaken in suboptimal conditions. There are long periods of routine and mundane surveillance combined with occasional periods of very intense physical activity where the stakes are high. Failure to detect drowning behaviour or detecting it but not providing flotation and rescue quickly enough can result in harm or death of an in-water patron. This tension between the extremes (low arousal versus hyperarousal) can in its own right create worry and tension in those tasked with lifeguard operations. Most of the time there is the expectation that nothing will go wrong, but there is also an expectation that one will be called into action to rescue someone whose predicament is a result of not detecting their behaviour soon enough. There is also the situation feared by all lifeguards where a drowning victim shows no subtle or obvious signs of distress prior to submersion. In these cases, it is usually a non-swimmer who lacks the ability to float (although occasionally this can occur when a swimmer suddenly becomes incapacitated due to a medical condition, eg. Epilepsy). In this regard, these situations create an ever-present level of intra-personal worry and a daily reminder of the importance of the role of a lifeguard (or anyone tasked with in-water supervision).

Excessive worry about risk and safety, however, can lead to anxiety, and if that state is prolonged, is not healthy. The attributes of chronic unease call for a healthy dose of worry centred on risk and safety that is present in the background of thinking, but not so dominant it overwhelms normal cognitive functioning or creates excessive physiological symptoms of stress. If worry about risk and safety is a dominant state, one needs to address the underlying reasons for its generation the same way as one addresses weak signals. The conditions need to be identified and remedied before they snowball to become a significant problem. Once addressed and the issue closed, worry is less likely to build and become normalised. Eventually, if worry about certain conditions become normalised, then complacency (in the form of apathy) is established, which is not consistent with a positive safety culture. Lifeguards need to be encouraged to express any worry they have about risk and safety to transform

concerns into positive action (by addressing conditions creating the tension), in turn reducing the levels of worry.

Figure 1. An 'inverted U' relationship between the usefulness of unease versus the level of unease. Note that low levels of unease increase risk of complacency and excessive levels of unease coupled with the usefulness of unease can induce anxiety. There is an optimum level of unease in promoting usefulness (Fruhen, 2015).
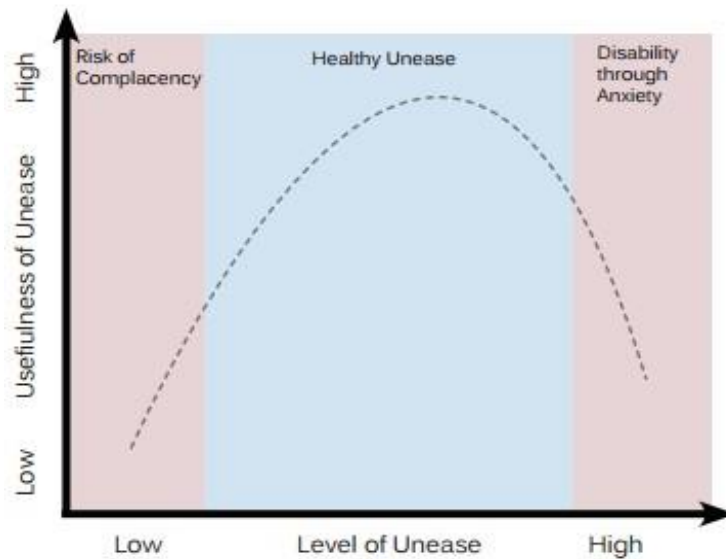
Experience. *Whether you have been involved in an incident before.* A hallmark of HROs is their ability to review failure and success to continuously improve their systems, operations and individual performances. Experience provides the basis for looking beyond the immediate task at hand by referencing similar incidents and circumstances from the past, gaining an understanding of the events surrounding those incidents, and learning from the lessons post-incident.

In the area of medicine, it is true clinicians can have thought biases based on the frequency and proximity of past events. If a new event presents similar to one encountered previously, clinicians can be drawn to favour a clinical diagnosis based on the previous like case. This form of reasoning is known as rule-based reasoning, or more specifically *frequency gambling,* and is a recognised pattern of reasoning amongst experts as a way of easing cognitive load by using *heuristics* ('short-cuts') instead of reasoning in a deliberate, slow way by creating a hypothesis, testing a theory and measuring the results. In high-stakes environments, these cognitive short-cuts are highly effective at solving most problems, but like all forms of reasoning is prone to errors. As discussed, a detailed analysis of such errors is complex, and beyond the scope of this paper, however, it is sufficient to understand that experience influences one's ability

to select appropriate rules to solve problems either successfully or not. Past crises also influence behaviour and reasoning in the present. It is human nature to overreact to a situation if a previous event like the one encountered didn't go well or had less favourable outcomes. Reflecting on previous crises and the lessons learnt can strengthen performance in the future and builds resiliency (Weick, 2007). Experience of similar adverse events in the past gives a person a 'heads-up' to the present and might shape an accurate mental model of the situation that others may not share, as they may not have read the signals (weak or strong) of an unfolding crisis.

At the same time, other members of the team may have experienced an adverse event more recently than the team leader, and so they are more attuned to recognising weak signals that lead to catastrophe. Their past experience opens up patterns of recognition that others may not have recognised so a different mental model of the situation at hand is formed and they have a 'heads-up' to the potential seriousness of an otherwise weak signal. This early recognition (right or wrong) is of no use unless the mental model is shared, otherwise it serves no useful purpose other than hindsight. Encouraging sharing of mental models is a crucial skill within teams that work in high-stakes environments and deal with crises, and this process of communication is best facilitated in a team with a flat hierarchy. A flattened hierarchy is encouraged during a crisis so team members, no matter their position or rank in the hierarchy are encouraged to speak up and share mental models, identify problems, offer solutions and challenge conflicting ideas if required. For example: *"Team leader, the last time I saw a child showing signs of distress like this, he submerged very quickly…I am curious why we are not responding,"* may be all it takes for a team member to share their mental model of the situation at hand, and escalated their concerns about inaction, potentially jolting a team out of complacency into a state of vigilance and action.

Thinking. *Ability to question assumptions and not jumping to conclusions.* Thinking is complex. Explaining thinking even more so. If we accept the reality that human thinking can be flawed, that we will and do err with alarming frequency, then that mindfulness will serve us well when analysing thought through the lens of chronic unease.

Crises and high stakes situations rob us of the time required for slow, powerful thought, so there is a tendency to revert to rule-based thinking. Rightly or wrongly, this default thinking can expedite a solution (if the right rule is applied for the right situation). An individual with a habit of chronic unease accepts there are occasional failings in their own and the team's reasoning and the rules used to solve problems. They remain open to the possibility of other solutions and encourage input from others. They have accepted the reality of human limitation and the fragility of normal problem solving and functioning

while under duress, so they use cognitive aids such as algorithms and checklists to guide problem-solving and formulating a management plan.

In our case study, examples of where the attributes of chronic unease shapes thinking is difficult to assess (as we don't see someone's thoughts), however, such thinking manifests as behaviour, and we can see some behaviour amongst the team and the leader that might indicate a dominant pattern of thought that questions assumptions and avoids jumping to conclusions. We propose the following behaviours are indicative of such thought in this case:

1. The decision to close the flags during the crisis was driven by the assumption matters might get worse, not better quickly.
2. The decision to call emergency medical services and a rescue helicopter early assumed a high potential for its need (despite clinical evidence) not assuming 'everything will be OK.'
3. The decision to call for support early from a neighbouring beach's lifeguards as an additional resource versus assuming the team could handle the situation despite an initial impression that the team was in control of the situation.
4. The team leader received information early in the initial crisis about a sighting at the other end of the beach. This information was well-meaning but conflicted with the team's mental model that the victim was located elsewhere. The team leader questioned the information and arrived at a logical conclusion it was probably inaccurate, so avoided jumping to conclusions on one small piece of irrelevant information.

Questioning assumptions is a vital skill, especially during periods of duress. During a crisis, information can be scarce, unreliable, and become irrelevant quickly as the situation changes rapidly (St. Michael, 2008). Effective leadership during such times requires collaboration with other team members to assertively challenge the validity of information, quickly disregard irrelevant information, but at the same time, remain open to other possibilities versus jumping to conclusions. Cross-checking and recapping information frequently amongst team members using effective communication is one antidote to building a platform for questioning information and the avoidance of jumping to conclusions as it cross-references mental models and allows for clarification in case of assumption. Communication errors amongst teams under duress have been identified that can contribute to a faulty team performance in a critical situation. Avoiding these errors is especially important in the early phases of crisis as incorrect assumptions at the outset can lead the team into actions that are also wrong or flawed. While detailed analysis of communications errors is also beyond the scope of this paper, in summary, common communication errors identified in critical situations include: Unspecified receiver, problems with articulation and terms, information overload, team members becoming 'tight-lipped', conflicts resolved with passivity or aggressiveness, poor listening, and unclear relationships (St .Michael, 2008).

Summary: Chronic Unease to Rescue-Ready

Chronic unease is not a novel concept and while originally developed by Shell for senior managers in a high-stakes industry such as oil and gas, the attributes of a chronic unease mindset have been identified amongst other HROs where preoccupation around safety and risk are dominant features of their safety culture. The authors of this paper propose that the attributes of chronic unease, as described by experts in this area, could be a powerful state of being lifeguards can adopt to improve individual and team performance to assist the avoidance of failure and errors by empowering lifeguards to structure their thinking around risk and safety, and identifying conditions that can lead to failure early.

While recognising the concept of chronic unease already exists, we see subtle differences in the application to a lifeguarding context. Firstly, chronic unease is predominantly focused on accident and error prevention in high-risk industries, and secondly, these settings (while the stakes for failure are high) are not primarily focused on a single task such as surveillance and rescue. The attributes of chronic unease are, therefore, a holistic mindset applicable to all areas of industrial processes. This mindset is of use to the individual lifeguard conducting surveillance, and the lifeguard team leader charged with managing a team of lifeguards in a dynamic environment, producing a change in organisational culture that could potentially influence policymakers. We have called this mindset "Rescue-Ready" to distinguish the attributes of chronic unease in the lifeguarding context. It succinctly captures the overall goal of thinking in such a manner. It has connotations of a lifeguard who is thinking about all the aspects of rescue, acting to prevent the need for rescue, but is at a moment's notice, ready for rescue. No matter the terminology, the overall goal of discussing a mindset we propose is called Rescue-Ready is to highlight that as a profession directly involved in managing risk and safety, the wider lifeguard community can learn valuable lessons from other industries, particularly HROs. There is a lack of scientific studies investigating many aspects of lifeguard practice. The few that do exist are focused on technical skills (e.g., surveillance or swimming ability) versus underlying human factors underpinning reasoning, communication, teamwork, errors, decision-making and attitudes. We believe more research is needed in this area; in particular, qualitative research methodologies to investigate what are common underlying attributes of highly effective lifeguard behaviours and thinking. This would provide some evidence to support our hypothesis that highly effective lifeguards display many attributes described within a state of chronic unease. The case study used in this paper has exemplified a Rescue-Ready mindset and how this creates positive results when used during a highly dangerous situation.

We propose the attributes of a Rescue-Ready mindset be included in basic lifeguard training as the profession strives to be as error and accident-free as humanly possible. Instruction in human factors like these is relatively new,

and in a profession where the stakes of failure are so high, is too important not to be included at all levels of lifeguard operations.

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