Safety Conversations

Catching Drift & Weak Signals

By Rosa Antonia Carrillo & Neil Samuels

IN BRIEF

- **Drift and weak signals (clues to potential incidents) are often hidden. Even when known, strong sociocultural barriers prevent people from talking about them.**
- **This article explores research that supports the need to encourage, equip and coach managers and supervisors on the art of conversation with their employees as the most influential form of communication.**
- **The research areas include social neuroscience, relationship psychology, complexity, drift, weak signals, information management through relational coordination, and the role of leaders in managing and influencing behavior. The authors combine these concepts into a direct approach to managing the human/organizational factors of safety performance.**

During the authors' many years of work to improve safety, they have interviewed hundreds of employees from all levels in many organizations. Yet, one interaction in particular stands out. After a fatality at a Georgia plant, a large group of employees and supervisors gathered to provide insight into the incident's root causes. Despite being pushed to identify other possibilities, they remained adamant that the root cause was a lack of trust and open communication. The group reported that it had long tried to bring the potential dangers of that situation to management, but "they just didn't listen."

The authors have spent most of their careers helping people listen to each other because they have come to agree with those plant employees. Often, information to prevent a failure is available, but management does not understand it or employees do not discuss it because they are afraid or they feel it will not make a difference. Unless managers can conduct and encourage the right conversations across all organization levels, preventable fatalities and incidents will continue.

This state of affairs exists partly because incident analysis and corrective actions focus on regulations, technology, policy and procedure, and the idea that human error is largely responsible for incidents. These are premises with which not all thought leaders agree (Dekker, 2006; Hollnagel, Woods & Levenson, 2006; Reason, 1997). In contrast, evidence shows that the analysis of complex incidents must emphasize an understanding of human and systems behavior, and that subsequent corrective actions would rely heavily on a specific set of skills and attitudes that create mindful conversations. As Mark Twain said, "We must stop all this communication and start having a conversation."

The idea that certain types of conversations are crucial to incident prevention is part of relationship-based safety (Carrillo, 2012) and the application of relationship psychology, an offshoot of complexity theory, to safety (Carrillo, 2011). These studies address questions such as, Why are there still incidents due to people do not following procedure? Why do we still struggle with getting management to listen to employees despite learning from the *Columbia* and *Challenger* disasters? Why, despite stated goals such as no incidents, no harm to people and no damage to the environment, do all three continue to occur?

This article aims to convince the reader that conversation is a necessary approach to address these questions. First presented is the concept of polarity: two apparently conflicting goals that are both necessary for success. For example, employees can either meet the numbers or follow all the safety procedures. To dissipate this myth, management would have to make time for the many conversations needed to effectively assess risk and clarify priorities. Instead, to create an illusion of clarity, most people respond with the either/or mentality that incident prevention requires always putting safety first. With so much emphasis being constantly placed on production, it makes sense to say "safety first" as a balance, but this can create a different set of problems later.

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The second perspective examines how relationships, feelings and emotions are the primary influences on human behavior. Nearly 40 years ago, Graen (1976) presented evidence that the relationship between supervisors and subordinates affects the subordinates' responsibility, decision influence, access to resources and performance. More recently, neuroscience research has shown that most of the influences on safety performance rest in this invisible realm because people's emotions, beliefs, thoughts, decisions and, therefore, actions are influenced by personal relationships with others (Cozolino, 2014; Rock, 2009; Schwartz, Gaito & Lennick, 2011). This research supports the conclusion that strengthening relationships between leaders and followers improves performance. Gittell's (2009) work on relational coordination has taken this concept further by showing how relationships across functions and levels of hierarchy create the network of accountability for safety that so many managers desire.

Third, this article examines possibilities for managing drift and the importance of building sensitivity to weak signals to allow timely corrective actions (Weick & Sutcliffe, 2005). The underlying premise is that the information needed to avert failure is available all around, and that people are the best sensors to recognize and interpret its meaning. Two challenges prevent access to this information: 1) most people lack the ability to effectively recognize early signals of drift into failure (Dekker, 2011); and 2) few managers can create the climate for open conversation because culturally they are trained to give information (answers) rather than ask questions (Schein, 2013). Schein suggests that managers adopt an approach of humble inquiry to encourage employees to bring forth information.

Finally, the authors offer specific actions leaders can take to put these concepts into practice to develop a culture of accountability and make a difference in their organization's safety performance.

The Polarity Principle in Safety Management: Moving From Either/Or to Both/And

One common approach to managing drift and raising the level of trust and/or open communication is to promote safety as a priority over production. Unfortunately, based on feedback from supervisor and employee interviews, saying "safety is first" does not address the reality of conflicting priorities that employees and supervisors often manage. This dilemma is an example of how to create a safety polarity rather than managing performance (Carrillo, 2005, 2011).

The concept of polarity management has gained increasing attention (Collins & Porras, 2002; Johnson, 1992; Koestenbaum, 1978; 2002). Today's executives face a serious dilemma caused by the perceived polarity of people versus profit. They are sensitive to the negative impact that fatalities, serious injuries and environmental damage have on company image and profits. These negative impacts must be avoided while still meeting shareholder profit expectations.

Collins and Porras (2002) use the term *paradox,* describing it as the "tyranny of the or." A paradox or polarity is a pair of interdependent goals that need each other over time to create and sustain success. When the focus is on one aspect, to the neglect of the other, the result is suboptimal performance. However, when an organization leverages them both as a system, it is better able to achieve goals. Other polarities can be change or stability; low cost or high quality; planning or opportunism. Collins and Porras (2002) suggest replacing the either/or thinking with both/and thinking. Many agree, but it is much easier said than done.

In safety, many executives struggle with how to communicate the importance of both safety and production goals while upholding the ethical standard of caring for people first. A misstep in this area can reduce employee engagement and management credibility. So which is more important, achieving zero fatalities or delivering the numbers? This is a false choice. Some organizations avoid this apparent conflict by saying "safety is a value" instead of "safety first." Does this address the underlying conflicts that people face as they evaluate and take risks in their daily work? As a manager once told the authors: "You will get scolded for safety violations and for excessive energy costs, but you will get fired for missing productivity targets."

Polarities are a result of how the human brain works. We can focus on only one aspect at a time (Koestenbaum, 1978). This represents a significant barrier to communication unless the manager is aware of it. When a leader talks about production, and does not specifically mention safety, the listener may assume that safety is not as important because his/her attention has been focused on a different aspect of the polarity.

Unless managers can conduct and encourage the right conversations across all organization levels, preventable fatalities and incidents will continue.

People continually communicate and interact, and in those interactions create a common understanding of reality, both as individuals and as a group.

Case Study: Polarity

An example of polarity arose during an investigation to learn why the entire safety committee of a pharmaceutical facility resigned in 1 day. The team leader explained that after a chemist was injured, the director ended his report by telling everyone to focus on the work because much time had been lost. According to the team leader, the director "did not care about people so why bother serving on the safety committee?" This after the director had spent the earlier part of the meeting talking about his concern for people (Carrillo, 2006).

To move from either/or to both/and requires the leader to 1) become aware of the polarity; 2) emphasize both aspects of that polarity; and 3) always end with what one wants in the foreground (Carrillo, 2011, 2012; Collins & Porras, 2002; Johnson, 1992; Koestenbaum, 1991). Managing polarity also requires aligning the reward system to recognize both. Without such alignment, organizations can easily (and unintentionally) reinforce undesired behaviors (Kerr, 1995).

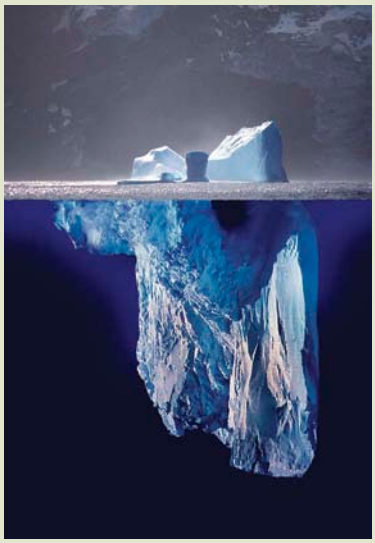
Kerr (2014) raises this issue with regard to the recent GM ignition switch safety issues. He asks: "Does GM's reward system dispense incentives for cost controls even to the detriment of product safety? Does it discourage employees from acting on their awareness of problems?" Based on a report by former federal prosecutor Anton Valukas, he suspects the answer to both questions is yes.

> Although managers' bonuses are based partly on vehicle quality improvements, and safety is supposed to be paramount, cost is 'everything' at GM, and the company's atmosphere probably discouraged individuals from raising safety concerns. Earlier this summer, a former GM manager described a workplace in which the mention of any problems was unacceptable.

Figure 1
The Iceberg Model

Influences on safety performance that lie below the waterline.

Visible:
Profit
Deadlines
Technology
Regulations
Measures
Behaviors



Solutions:
Technical
Behavior observation
More rules
More audits

Invisible:
Thoughts
Emotions
Beliefs
Relationships

The Iceberg Metaphor: Powerful Influences on Safety Performance Lie Below the Waterline

The earliest warning signs of breakdown in the safety management systems start below the waterline. They are invisible because they are either hidden from sight, unnoticed or people are reluctant to speak about them. Addressing weak signals (Weick & Sutcliffe, 2005) and drift (Dekker, 2011; Snook, 2002) is the most proactive approach to higher safety performance.

Adapting Hall's (1976) culture iceberg metaphor (Figure 1), we can see the traditional, visible, tangible approaches to measure and address safety sit above the waterline. Below lie the invisible, tacit or intangible influences that may often be neglected because they are difficult to address and measure. The Relational Coordination Survey (RCS) is a tool to measure these aspects of organizational life.

Above the waterline sit the phenomena one sees, hears and touches such as behaviors, symbols and signs (e.g., hold the handrail); policies and guidelines [Shell's 12 Life-Saving Rules (Shell, 2014)]; and programs and espoused values (e.g., safety comes first). The focus of these safety efforts relies on behavior observation, engineering controls and procedures/standards. Are these effective? Clearly they have been, as safety has dramatically improved over the past few decades. But they are clearly insufficient, as the number of fatal work injuries has not been significantly reduced between 1992 and 2012 (BLS, 2012).

For example, after the 2005 Texas City refinery explosion, BP redoubled its focus on processes and policy by implementing an operating management system (OMS). This system was an attempt to control various situations through policy, technology and procedure, but it did little to address the underlying social aspects of safety. Of the 48 subelements in the OMS, only two dealt even remotely with communication and culture, and neither of those mentioned relationships in any way (BP International Ltd., 2008).

Just 5 years later, the *Deepwater Horizon* disaster occurred. Again, BP focused above the waterline and created an entirely new organization focused on safety and operational risk. This group generated new requirements with which businesses had to comply and audited that compliance. However, little effort was made to address what lay below the surface (BP, 2011).

Why this continued emphasis on what is above the waterline? Because people in this organization (like most) focused where they feel comfortable. It is hard to go below the waterline because it is messy, and few people are trained to face and address conflict, resentment or other strong emotions. The scientific method relies on data that can be empirically tested—emotions are difficult to measure and track to outcomes. Yet, humans intuitively know that emotions, beliefs and relationships play a key role in how well people work together, and the power of relationships has begun to be documented through research.

The Power of Relationships & Conversations

Relationships begin at birth. Without physical contact from caregivers, infants suffer failure to thrive syndrome despite receiving adequate nourishment (McLean & Price, 2011). The result may not be quite so extreme in adults, but the quality of relationships has a tremendous impact on life (Brooks, 2011; Cozolino, 2014; Gergen, 2009). Because people are hardwired for relationships, we cooperate to survive and thrive. This makes us interdependent and reliant on the quality of information received from each other (Rock, 2009).

In organizations, people continually communicate and interact, and in those interactions create a common understanding of reality, both as individuals and as a group (Gergen, 2009). Someone wishing to change the current understanding within a particular group must first become part of that network. That means having conversations with people. One cannot lead by sitting in an office or in meetings that do not include the people who report to him/her or whom one affects.

This all points to the power of conversation, a social, unforced, unplanned collaborative activity in which people jointly make sense of what is going on (Stacey, 2010). It is through this emergent collaborative sense making that people continuously shape their reality and are being shaped by it (Shaw, 2002). Thus, more than anything else, the conversations that happen in an organization produce current results.

Neuroscience Research: Why Relationships Matter

Recent neuroscience research shows the significant impact of conversations and relationships and their link to management (Cozolino, 2014; Rock, 2009; Schwartz, Gaito & Lennick, 2011). Rock (2009) discusses five particular attributes that affect the brain's threat/reward center and produce the same effects as shown on functional magnetic resonance imaging as physical pain or financial reward. All five—status, certainty, autonomy, relatedness and fairness (SCARF)—reflect the nature and quality of relationships.

The implications for this approach to safety are many. If a worker feels put down (loss of status), unsure of what to do or what is happening (uncertain), micromanaged (autonomy), ostracized (relatedness) or mistreated (fairness), his/her brain reacts as if s/he had been slapped in the face. The typical human reaction to such threats is either fight or flight. And since physical contact is frowned on in most workplaces, employees disengage. In this state of mind they are unlikely to put any of the company's goals first, including safety.

The corollary is that when people feel respected and valued as team members, when they do their job their way, and they and their teammates are treated fairly, the same reward centers of their brains light up as if they received raises. Employees in this state of mind are much more likely to act in positive ways. Other research has shown that when a brain's reward centers are being activated, the worker is smarter, physically and emotionally stronger, and more innovative (Fredrickson, 1998). Imagine the impact that would have on safety in the plant.

How can one build strong communication that rewards rather than threatens? Think about the relationship between a shift supervisor and his/her team. Is s/he busy taking care of administrative burdens and sending e-mails to the team at the end of the day, or is s/he walking the floor meeting them in their workspace? In some places, a manager walking the floor is concerning due to past conversations. "What's wrong now?" is a typical response. Employees feel threatened by a manager's presence rather than reassured. Changing those conversations can affect this perceived equality status, thus opening the channels of communication. When s/he does meet them, is s/he genuinely curious about what they are doing, what they have noticed about the safety of their own and their teammates' jobs and is s/he noticing and rewarding their safe working practices? If s/he does this right (and is genuine about trying) remarkable things can happen.

Case Study: SCARF in Practice

One example that demonstrates the power of applying SCARF principles to safety improvement is from the vice president of safety for a large North American-based industrial minerals company.

This company has struggled to deal with its most frequent (yet less serious) injuries: slips/trips/falls at ground level, hand/finger injuries and overexertion injuries. Though not life-threatening, these injuries are a concern, as they consistently appear in the safety performance data. In addition, company sites tend to become overly focused on prevention of these injuries. What most concerns the vice president of safety, however, are the hazards that may induce life-altering injuries and potential fatalities.

Given this company's work environment with its prevalence of high voltage, high pressure, high temperature, high horsepower and large mobile equipment, the company needed to ensure that all sites maintain their focus on the top safety risks and ensured that every employee elevates his/her own personal safety guard to recognize and respect all hazards.

Rather than address this issue at the executive level and roll-out directives to the organization as a series of new policies, procedures and engineering standards, the company took a different approach that captured the upside of SCARF and, thus, fully engaged people in the solutions. The company reached out to all plant and mine managers plus the safety leader at each site and asked them to identify what they believed were the top hazards that could cause life-altering injuries or a potential fatality at their respective sites. The company combined all the responses into a master list totaling 40 hazards. The list was sent back to the sites to rank and identify the most significant hazards across the entire company. Nine items rose to the top with a notable gap between those and item number 10.

Examples of the high hazard, top safety risks identified included:

Someone wishing to change the current understanding within a particular group must first become part of that network. That means having conversations with people.

•work performance in vertical mine shafts;
•energy isolation (e.g., lockout/tagout);
•working at heights;
•interface between mobile equipment and pedestrian workers.

With the top hazards identified, the company asked the sites to assemble individual teams to address each hazard. Nine teams were organized (one team for each hazard) consisting of 6 to 12 members per team; a total of more than 80 employees across the nine teams. Team membership consisted of frontline workers and supervisors from multiple sites who were experienced in conducting work activities associated with the top hazards.

From June 2013 through June 2014, on a rotational basis, the nine teams met for a weeklong back-to-the-drawing-board type hazard analysis. The result was the development and distribution to all sites of a policy, procedures and standards specific to each top hazard that not only complied with applicable regulatory requirements, but contained best practices and mitigation procedures that exceeded the regulatory requirements.

Most notably, through the teams' hazard analyses and their conversations, many of the risks and exposures within each of the nine hazards were eliminated. For example, for some tasks that required fall protection, mechanical or structural controls were installed; this eliminated the need for employees to conduct the tasks at elevated heights (i.e., the worker can now complete the task from ground level with no need to don fall protection gear). As the implementation of this initiative progresses, the company continues to increase its organizational confidence in preventing possible life-altering injuries and potential fatalities.

Trust & Cross Levels of Organizational Research

What organizational cross-level dynamics offer further insight into the use of conversation as an early warning system to prevent failure? The opening story of this article mentions a dialogue where employees believed that lack of trust and open communication were the root causes of a fatality. Until now, the focus has been the many challenges of creating a culture of open communication from a leadership perspective (for both managers and safety professionals). The authors have proposed that communication is affected by and affects the quality of the relationship between leaders and followers, ultimately impacting trust, respect and mutual obligation (Graen & Uhl-Bien, 1995).

Trust is recognized as a potentially important factor in safety performance (Carrillo-Simon, 1996; Conchie & Donald, 2006, 2008; Schein, 2013). While this article has focused on the relationship between leader and follower, studying cross-levels offers further insights about the dynamics influencing relationships and trust (Klein, Dansereau & Hall, 1994). For example, while studying trust, Conchie and Donald (2006) found that attitudes toward offshore management were the strongest safety performance predictor at an industry level. At a facility level, however, safety performance was best predicted by attitudes toward contractors and colleagues. These findings suggest that for optimal efficacy, safety initiatives should target attitudes toward specific groups.

Furthermore, trust is not static; it can grow or contract based on the actions of individuals, groups or organizations (Koza & Lewin, 1998). Trust is bidirectional and coevolutionary (Currall & Inkpen, 2006). While organizational or higher management actions typically influence trust levels, individuals such as whistleblowers can have a dramatic impact on the organization. This idea is central to our concept of educating every individual on how to communicate in a way that creates, maintains or restores trust.

Because organizational levels affect each other, loss of trust in one can affect another. Conversely, a strong trusting relationship between two managers could transfer to their groups. This interaction and growth in trust at the interpersonal, intergroup and interorganizational levels over time is what Currall and Inkpen (2006) call the *coevolution of trust*. The implications may be that the solutions to improving communication lie as much in the interrelationships between levels as with that between individuals or groups. If so, the dialogues and conversations being advocated should take place across functional boundaries and hierarchical levels.

Schein (2013) observes that trust in the workplace means some degree of personal relationship that will lead to more open communication, especially from employee to boss. Can the boss trust the subordinate to speak up if the boss is about to make a mistake? This level of trust is difficult to achieve, yet that is what is needed. Schein holds that this level of trust can only be achieved if the boss is willing to get to know his/her followers more personally and creates a climate in which it is psychologically safe to speak up.

Relational Coordination: Measuring the Quality of Relationships & Communication

Everyone knows intuitively that more communication is crucial to success. This often translates into more meetings. The theory of relational coordination (RC) has produced considerable insight into what makes a meaningful exchange of information, which can help determine how to improve communication. This research also shows that organizational practices such as leadership, rewards, accountability, recruitment, training and information systems drive the quality of information exchange that ultimately affects quality and efficiency.

RC includes seven dimensions that characterize the communication between members of high-performance organizations (Table 1). RC is a scientifically proven theory of the relational dynamics behind effective communication tested in complex environments such as airlines and hospitals (Gittell, 2003, 2009).

RC is conceptually connected to the Leader-Member Exchange Theory of Leadership (LMX). A groundbreaking study (Graen, 1976; Graen & Uhl-Bien, 1991, 1995) documented both the natural development of the relationship between man-

ager and follower, and the tendency of managers to quickly decide whom to trust or listen to. Once these in-groups and out-groups form, they are not conscious and are difficult to change, creating strong barriers to the free flow of information and diverse perspectives.

Gittell's research incorporated these relational principles and the idea of social networks. She developed a survey tool to measure RC, which has been used to pinpoint communication breakdowns and how to overcome them. The tool, found at **www.rcrc.brandeis.edu**, requires little technology or administrative burden and provides specific and actionable data.

Table 1 shows an adapted version of the survey to safety. The first three dimensions describe the context that gives meaning to the information (i.e., shared goals, shared knowledge, mutual respect). The next three relate to the qualities of viable information (i.e., frequency, accuracy, timeliness). The last dimension, problem solving, refers to maintaining a focus on the problem, rather than blaming individuals. These dimensions facilitate the transfer of knowledge as well as influence the decision-making process.

Table 1
Dimensions of the Relational Coordination Survey

RC dimension	Description of interaction with groups/roles involved in a process
Shared goals	Do people in these groups/roles **share goals** in addressing safety concerns in the work process?
Shared knowledge	Do people in these groups/roles **know** about the work each person does to address safety concerns in the work process?
Mutual respect	Do people in these groups/roles **respect** each other's work to address safety concerns in the work process?
Frequent communication	How **frequently** do people in each of these groups/roles communicate with each other about safety concerns in the work process?
Timely communication	Do people in these groups/roles communicate with each other in a **timely** way about safety concerns in the work process?
Accurate communication	Do people in these groups/roles communicate with each other **accurately** about safety concerns in the work process?
Problem-solving communication	When there is a problem with safety concerns in the work process, do people in these groups/roles blame others or work together to **solve the problem**?

Application of RC to Safety Management

As Stacey (2007) and Shaw (2002) suggest, think of the organization as people in constant communication and interaction, influencing planned outcomes in often unpredictable ways. That is why policies, procedures and standards, which are static and quickly become irrelevant if not discussed regularly, are insufficient to control outcomes. Instead people rely on their own knowledge and experience (tribal knowledge) and conversations with others in the here and now.

How do OSH professionals engage people in the right conversations relevant to risk assessment and safe action? One path offered by RC research is to first identify the key players involved in a core process and explore where and how they are interdependent. Then, create a conversation where they evaluate the effectiveness of their communication and collaboration as it relates to the operation's risks and hazards. Questions discussed during this phase include, How does my work affect yours? How does yours affect mine? Are we dropping the ball? Do you feel I have your back?

Using the seven RC dimensions in an anonymous survey and conversation guide will reveal where and how the interdependence is breaking down. One potential outcome is that participants identify who needs to be included in specific conversations and what type of information needs to be exchanged. In the past, people may have felt meetings were a waste of time, but now they look forward to these new gatherings because it helps them do their work more effectively, more safely and with less stress.

The Role of Leaders in Creating Conversations

High-quality conversation is critical to creating relationships of trust, respect and open communication that are necessary to surface information hidden below the waterline. These are the often-unvoiced concerns/issues that could lead to failures. Thus, relationships (or as one company calls it, social safety) are the critical elements that create a safe and productive workplace. What can leaders do to enhance them? It requires a significant change in the leadership style from one of control to one of collaboration. This implies that a manager's key role is as a creator of conversations.

Whether engaging in their own conversations or enabling others', leaders should remember the SCARF model and that every conversation catalyzes either the human brain's threat or reward response (sibebar at right). Genuine praise lights up the reward centers, so leaders should spend more time catching people doing things correctly rather than being focused on finding fault. Holding conversations for business context, thoroughly explaining the rationale for change and actively involving staff can help create a sense of certainty. Empowering teams to make choices and find their own ways of working safely and delivering business results creates a great sense of autonomy. Including people in the decision-making process and helping integrate new members into teams helps build relatedness. Transparency, treating everyone similarly and doing the right thing helps generate fairness. Acting in this manner and creating the kind of environment where others do likewise engages employees.

SCARF Definitions & Supporting Actions

Status
- Treat others with respect.
- Ask questions—listen.
- Ask for help, especially down through hierarchical levels.

Certainty
- Share information, especially during times of change.
- Broadly involve others in planning and implementation of changes.

Autonomy
- Let others make as many decisions about their work as possible.
- Focus on the what not the how.

Relatedness
- Build trust—be inclusive.
- Get to know people.

Fairness
- Avoid favoritism.
- Favor transparency.

What difference might a leader's focus on social interaction around safety make?

Case History: Missing Opportunity for Conversation

What difference might a leader's focus on social interaction around safety make? Let's consider the final moments of the BP Macondo oil well disaster and make an educated guess. Following is an excerpt from a *New York Times* article that was based on interviews with 21 crew members from the drilling contractor and on sworn testimony and written statements from nearly all of the other 94 people who escaped the rig. Their accounts, along with thousands of documents describing the rig's maintenance and operations, made it possible to piece together the *Deepwater Horizon's* last hours.

This short story illustrates the quality (or lack thereof) of the relationship between the senior staff of Transocean (the drilling contractor) and BP. To set the scene, Caleb Holloway, who worked the drilling floor has just been called down to Jimmy Harrell's office (the senior-most Transocean leader on the rig):

> "All right," Harrell began. "Close the door." Harrell handed him a box. Inside was a handsome silver watch—a reward for spotting a worn bolt on the derrick. "You did a really good derrick inspection," Harrell said. The gesture was typical of the potent safety culture on the *Horizon*, where before every job, no matter how routine, crewmembers were required to write out a plan identifying all potential hazards. Despite the long hours and harsh conditions, injuries were remarkably rare—so rare that two BP executives and two senior Transocean officials had flown out earlier in the day to praise the crew's safety performance. (*Note the focus on above the waterline solutions.*)
>
> But the men were also there to discuss the *Horizon's* crowded schedule. Along with finishing the Macondo, the rig had to complete several repairs before beginning two other high-priority projects for BP. The executives were keen to keep the Horizon on track. In e-mails, BP managers—whose bonuses were heavily based on saving money and beating deadlines—kept asking when the well would be finished.
>
> Holloway returned to work, and he and the other floor hands got busy cleaning the drilling floor. *They avoided the drill shack, though. Lately, there had been too much stress there.* (Emphasis added.) Holloway could tell when the BP company men got on Revette's (the Transocean driller) nerves: he would rub his head a certain way. This had happened a lot on the Macondo. The *Horizon* might have been Transocean's rig, but it was BP's well, and it was obvious that the guys in the shack felt that the BP men were breathing down their necks. "You could just tell," Holloway said.

What kind of relationship existed between senior Transocean and BP personnel? Was there enough trust, respect and open communication to call a conversation when Revette's weak signal was broadcast (the rubbing of his head)? How might things have unfolded differently had a senior leader from either company brought together the key players and created a conversation about that very point?

What Is Drift? Is it Manageable?

Drifting from procedure is inevitable, mostly invisible and can have deadly consequences, especially in high-hazard environments. It is yet another piece of evidence to encourage investment below the waterline for incident prevention. The investment is in creating the opportunity for conversations about drift and weak signals.

Practical drift, a term coined by Snook (2002), summarizes how goal conflicts, multiple dynamic interactions between systems, short- and long-term feedback loops, and standards for performance affect the consistent implementation of standard operating procedures. Dekker (2011) shortened the term to drift incorporating the dynamics of complexity science.

Snook and Dekker have observed that the usual incident investigation process, which ends in a long list of corrective activities, rarely lowers serious injuries and fatalities. Dekker (2011) and Connor (2012) observe that drift is always easy to see in hindsight. However, hindsight does not predict future drift. In fact, studies have found that hindsight bias is the greatest obstacle to evaluating the performance of humans in complex systems after bad outcomes. (Dekker, 2007; Hugh & Dekker, 2009; Woods & Cook, 1994)

Weick and Sutcliffe (2005) introduced the concept of weak signals. They found that the biggest difference between highly reliable organizations (HRO) and other organizations was that the former had a tendency to detect the significance of small signs or weak signal and respond strongly when needed. Early drift is a form of weak signals. If it is inevitable how can it be managed?

For Dekker (2011), drifting into failure is not so much about equipment breakdowns. It is about an organization not adapting and coping effectively with the complexity of its environment. Dekker (2011), and Weick and Sutcliffe (2005) advise tapping into the intelligence and observations of the workforce; however, this is a significant challenge as seen in the following case study.

Case Study: Two Power Utilities Address Drift

Two utilities attacked drift: one identifed unbreakable rules, the other identified rules to live by. The idea is to get employee (i.e., union) buy-in to a few rules that everyone agreed to never drift from rather than to include every safety procedure. There had to be consequences for violations, so disciplinary actions were outlined. In the first case, the union abandoned the unbreakable rules following the first disciplinary case. In the second experience, the attempt, though more successful, still created backlash as reported by an internal consultant:

> The rules-to-live-by approach demands real attention as a cultural issue. While it is still in the early stages of implementation, there have been positive and negative cultural impacts. The positive impact is that the program is credited in part with strengthening the norm to confront peers in the presence of unsafe acts and conditions. On the negative side, it is also credited by many with:

1) dampening near miss reporting; 2) reducing the flow of information from craft to supervision; and, 3) fueling mistrust. In particular, union workers reported not speaking to their supervisors so that they would not get punished as well.

The consultant recommended chartering a cross-functional, multilevel team with a high-level sponsor, to address the unintended cultural consequences. Per the consultant (personal communication, 2014), this step was never taken.

Case Study: Positive Conversations to Catch Drift

In contrast, Gantt (2014) describes his experience using conversations to catch drift by asking questions such as:

1) What procedures are available/written for the plant shutdow?

2) Which were successfully followed, and why?

3) Which were not followed, and why not?

4) What was the outcome or potential outcome of following/not following the procedure?

5) Do any procedures need to be added?

Gantt explains:

> We basically went through questions like these to identify what happened, what should have happened (per procedures, rules, planning processes), then where we found gaps, we talked about why those gaps existed and the best way to bridge those gaps.
>
> For example, we found one right thing to be that someone did an excellent, systematic job ensuring that the logistics of a particular task were taken care of and communicating those logistical requirements to the team. When we explored how others could emulate this we identified the need for a focused checklist that could be used as a planning and communication tool (used in the daily planning meetings they have for the project managers and engineers). In effect, we identified a procedure that should be followed for future shutdowns.

Barriers

As these cases show, having people talk openly about drift in their work can be highly beneficial. But tremendous barriers prevent creating a climate with the requisite level of trust and open communication necessary for doing so.

Mistakes are seen as failures. Weak signals often show up as small mistakes. People hesitate to bring them up, both their own and others'. Fear of losing face, getting in trouble or being ostracized for incompetence are among the primary drivers for this behavior. Incident root-cause analysis inevitably points to human error, and even when done with the best of intentions to avoid blaming, leaves those involved feeling shamed. After a fatality that happened several continents away, one senior executive sought psychological counseling and ultimately resigned because the guilt was overwhelming (personal communiation between author and executive). No valuable lessons are learned when mistakes are viewed as failure.

Managers and supervisors are seen as experts. Frontline employees are most likely to spot weak signals, but information has trouble travelling up the chain of command. Supervisors and managers are not trained to ask questions; they learn to have answers, give orders and be responsible for controlling the organization. When employees are not asked questions in a climate of humble inquiry, they are unlikely to give information that might insult or anger someone in a higher position. Even if information is offered, managers and supervisors might not listen, which is a response that eventually shuts down communication.

The illusion of control. An organization that is overconfident based on its past success or its management systems may disregard many weak signals (Weick & Sutcliff, 2005). This barrier is closely related to the manager as expert leadership model. The myth that all outcomes can be controlled or predicted has been questioned by researchers who have applied complexity theory to safety systems (Carrillo, 2011; Dekker, 2011; Hollnagel, et al., 2006; Weick & Sutcliffe, 2005). Organizations are no longer viewed as machines that can be engineered and designed for incident prevention; they are viewed more as complex living systems. Weick and Sutcliffe (2005) point out that successful safety management systems rely most heavily on creating superior communication and collaboration that supports the free flow of information throughout an organization. Again, in a command-and-control culture, managers and supervisors are unwilling to give up power. This leads back to fear of making mistakes and the dire consequences at stake for the leader if employees are empowered and fail.

Silos and suppressed collaboration. This barrier prevents weak signals from being communicated for several reasons. Without a trusting relationship between team members and between different teams and functions, information will likely not be shared. Furthermore, even if shared, it is unlikely to be heard because of the belief that, "They don't understand our work, so how can they give us valid feedback?"

Fear of giving and receiving feedback. Communicating weak signals carries great personal risk. It would be easy to be wrong, then be accused of being chicken little. Past negative experiences with receiving and giving feedback often make workers cringe when they hear someone has feedback, as it hardly seems to be good. Behavior observations programs have focused on this tool to increase the use of safe behaviors. The literature offers many stories about pencil whipping observation forms and failed efforts. Success stories also exist that describe cultures in which trust, open communication, autonomy and responsive leadership are prominent. The sharing of weak signals would probably need an even more supportive environment.

Once recognized, drift could be a weak signal of impending failure or an indication of a more effective way of working. Engaging people in an inquiry to explore how they came to believe that not following procedure makes more sense could lead

Having people talk openly about drift in their work can be highly beneficial.

A leader's level of trust in his/her workers as well as his/her ability to create relationships will influence the outcomes.

to a more profound sense of engagement in their work. Leaders are key to ensuring a successful inquiry, in part by knowing whom to bring into the conversation to help reveal hidden issues. Rather than focus on titles, the leader must consider who brings the necessary information and perspectives.

However, remember that many cultural barriers hinder an open discussion on drift. Employees may feel unsafe admitting a drift from procedure. Assuming a role of asking questions with genuine curiosity may trigger fears of loss in power or status for a manager or supervisor.

A leader's level of trust in his/her employees as well as his/her ability to create relationships will influence the outcomes. When a leader shows a consistent willingness to listen without blame fixing, people are more likely to talk about and learn from drift. One cannot manage by sitting behind a desk or through a computer. Managers must get comfortable with social interaction.

Putting It Into Practice

No evidence has been found that policies, rules or demands to work more safely fuel employee engagement. Demanding strict adherence to policy with the threat of discipline tends to activate the threat response leading to compliance (at best) and more likely to malicious compliance, which is even worse (compliance to your face, defiance behind your back). Given that these approaches to change are insufficient, this article has offered the concept of educating organizational members in the art of mindful safety conversations to save lives and prevent injuries (Figure 2).

Mindful conversations are a powerful tool for incident prevention, but they need a productive safety culture to take hold and someone to decide change is needed.

Step 1: As the model shows, such desire for change comes from one of two sources, desperation (e.g., rash of incidents) or aspiration (e.g., We are good, and we could be even better).

Step 2: Having made the decision to act, the next step is to get true alignment among the site or company leaders on how they would like to improve safety performance, their goals and the philosophy on how they want to lead the change.

Step 3: Use the RC survey to assess and improve the relationships in the organization.

Step 4: Through high-engagement dialogue and problem-solving conversations, the organizational gaps are addressed. This is significantly different than creating a list of corrective actions for more training, JSAs or other one-way communications.

Step 5: As part of this approach, managers and supervisors play the role of coaches continually holding their own mindful conversations and supporting others as they learn this new skill set.

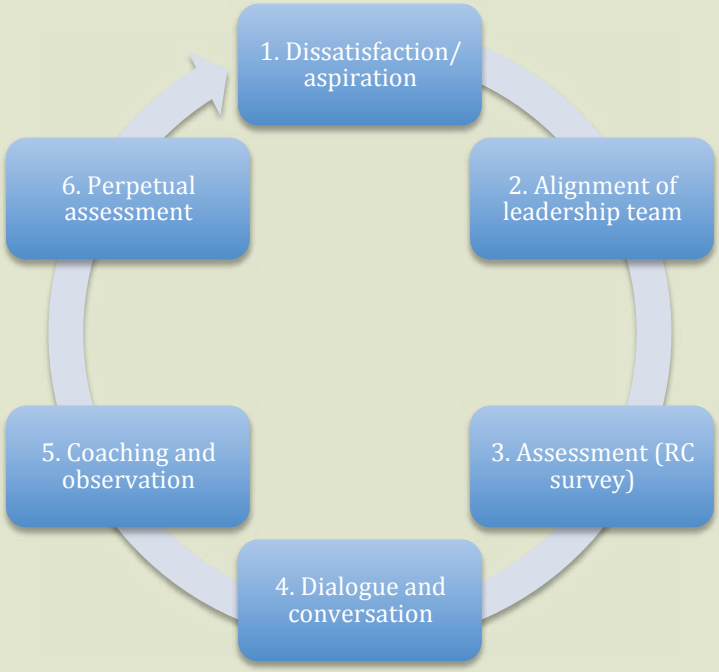
Step 6: Change is the only constant. The entire organization must understand that they will be in a state of perpetual assessment, continually examining the quality of their relationships.

The next step is to determine whether the culture is ready to support safety conversations? Use the following list with the leadership team (or other individuals and groups) to quickly gauge views around the culture's readiness.

How can leaders take this focus on relationships and new thinking about their role to develop a culture of accountability and make a difference in safety performance? Here are specific suggestions:

- Recognize and name the polarities/paradoxes present and realize they are natural and not a problem to be solved (e.g., live with contradiction). Explain them to the organization to help everyone understand that both sides of the polarity bring value. The key is getting the best of both while minimizing the downside that comes from focusing too much on either one.
- Keep the SCARF model in mind to remain consciously aware of the impact of all interactions. Use that awareness to calibrate words and actions. Notice and label reactions in terms of SCARF and use that knowledge to mitigate the threat response (e.g., "It is only my brain reacting; I can intervene").
- Make resources (e.g., time and space) available to allow for more natural conversations.
- Bring anxiety, dependency, fight or flight, cliques or subversion to the surface so that these issues can be discussed and resolved. Deal with conflict explicitly.
- Remain open to new or contradictory information rather than relying on predictive planning.
- Do not mistake meetings, e-mails or announcements with communication.

Figure 2
Relationship-Based Change Model
Constant assessment of the quality of communication between interactive roles and fuctions.



•Role model cocreative conversations where differing perspectives are valued. This means suspending judgment and listening deeply to others until they know that site managers understand what they are saying and why. Be genuinely curious and responsive.

These new behaviors underpin the cultural and transformational change at both the personal and organizational levels.

Conclusion

Better OSH performance stems from more meaningful conversations about how to manage safety challenges. If we thought of organizations as people in constant communication and interaction, influencing planned outcomes in often unpredictable ways, how would we manage differently? How would we engage people in the right conversations relevant to risk assessment and safe action? In a high-risk quickly changing environment, quality conversation is critical to create the relationships of trust, respect and open communication that are necessary to surface information hidden below the waterline.

While effective safety management systems are part of every successful organization, the most successful ones also pay attention to creating superior communication and collaboration that support the free-flow of information. Absent a trusting relationship among team members and between different teams, there is little chance that information will be shared.

If relationships, feelings and emotions are the primary influences on human behavior, companies must equip managers and employees with the skills to build and maintain effective working relationships, and repair them if needed. Beyond the usual listening and inquiry skills, employees must understand concepts such as polarity and SCARF so they can comprehend how the human brain interprets messages. OSH managers must promote humble inquiry and the perspective that every individual in the organization can contribute information vital to incident prevention. Creating such relationships between leaders and followers, then among all employees ultimately impacts trust, respect and personal accountability.

Developing this organizational capability is essential to effectively manage drift and increase sensitivity to weak signals. Catching drift and weak signals is difficult because they often involve emotional and relational conflicts, hence the proposal to focus on improving social interactions to raise awareness of safety issues. The iceberg, humble inquiry and SCARF models offer leaders an approach to this difficult task.

Mindful conversations are a powerful tool for incident prevention, but they require a productive safety culture to take hold and a strong leader/sponsor. A socially reinforced approach using conversation and relationships cannot succeed within a managerial climate of command and control. People will not freely contribute their ideas and observations if they fear retribution or do not feel valued. Thus, the leader as creator of conversations is an important role in creating a climate for open communication.

The curriculum to prepare managers and employees to create this culture of open communication would include some classroom education in managing polarity, how to maintain mutual respect, how to give performance feedback, and the role of emotions and feelings in communication. The most impactful learning, however, would take place during the implementation of the relationship-based change model. Once fear of making mistakes is diminished, people are able to experiment with solutions and learn from them continuously.

Approaching safety in this manner helps organizational members form new opinions on what is right and wrong, safe and unsafe, productive and nonproductive, and it enables everyone to more actively support each other's safe work. It helps break down silos and create an environment in which everyone knows that someone has their back so that drift can be addressed openly and in a timely manner.

Finally, and perhaps most importantly, positive relationships of trust, respect and open communication enable the organization to adeptly deal with the unexpected events that lead to fatalities and serious injury as well as environmental and reputational damage. There is no way around it. OSH professional must get out from behind the desk and interact with people to influence their choices. The wave of the future is relationship-based safety. **PS**

When a leader shows a consistent willingness to listen without blame fixing, people are more likely to talk about and learn from drift.

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