Cognitive-Behavioral Safety: How Stages of Change Influence Safety Behaviors

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Introduction

Let's face it, we all have to deal with change. Whether we are trying to lose weight, change our golf swing, improve our communication with our spouse, or adopt a new safe work procedure, important change takes energy. And people do not expend energy without sufficient motivation to do so. This paper outlines a model of the predictable stages people go through to make significant change and highlights the importance of targeting each stage to help people become safer. This paper will also discuss how a cognitive-behavioral approach offers a more comprehensive method to moving people through these stages.

Safety across many industries has shown dramatic improvement over the past decades as identifying and mitigating risks has received increasing attention and effort. If we were to compare practices, procedures, and physical work environments on the job today side by side with job sites from just a few short decades ago, we would see how much things have changed. And yet people still continue to be injured and killed on the job each year. Many companies and organizations have not been willing to accept these facts and have undertaken the challenge of embracing the concepts of "zero harm" and "injury-free" workplaces.

While many industries as a whole have made great gains in safety, the continuing challenge for reaching an injury-free workplace rests at the human level. This is not meant to lay blame for injuries at the individual worker's feet, nor focus solely on mistakes of management, nor write off injuries as the result of poor safety climates. Any and all of these can be found in particular instances to have resulted in injury. In order to realistically reach the goal of injury-free workplaces, short of finding a way to build robots or drones to do all work that entails risk, we need to fully understand how human beings change.

This focus can lead us to skip over a fundamental human aspect – that people think and feel beyond the reward and consequence systems set up in a behaviorist approach. From a psychological perspective, initiatives that do not take this into account may not achieve long-term success because the approach does not fully engage individuals in embracing personal change.

The Individual Change Process

Addressing internal processes among leaders and workers will help move a company closer to meeting the safety challenge. However, it is also important to recognize that becoming a person who thinks and behaves more safely involves personal change. As such, to be successful, any safety program will need to consider the specific internal processes involved at various points during the change process. Prochaska & DiClemente's (390+) Stages of Change (SoC) model is a well-supported conceptualization of how individuals make significant change in their lives. The model has been applied to a broad spectrum of individual change from health behaviors to readiness for psychotherapy to addiction and many more. The stages include:

1.   *Precontemplation:* the individual at this stage is not aware of, nor contemplating, the need for change

2.   *Contemplation:* the individual has begun to think about the need for making change but has not committed to nor made change

3.   *Preparation:* the individual has increased his or her commitment to change, with intention to make change in the near term, and may have begun making small changes

4.   *Action:* the individual has begun engaging in new behaviors but has not yet cemented these changes over time

5.   *Maintenance:* the individual has been consistently acting on the change made over a period of time

6.   *Relapse:* many change efforts result in periods of relapse where the individual falls back into old behavior patterns

To reach safety goals and help individuals take charge of their own safety, safety professionals need to understand how to meet individuals where they are in the change process. Effective safety systems will be able to address people where they are at in terms of stages of change. Ask yourself:

"How well do our safety systems address each of these stages?"

Many efforts aimed at improving safety, including many BBS systems, focus primarily at the action stage. If our initiatives are aimed here, we are assuming that individuals are ready, willing, and able to make changes regarding their safety. Many people involved in safety improvement, from safety professionals to management to supervisors to consultants come up with various explanations for why individuals do not embrace safety efforts or new programs. It is worth asking ourselves whether we have assumed individuals are either ready to engage in change or can be motivated to change by external consequences. By intervening earlier in the SoC model, Cognitive-Behavioral Safety (CBS) approaches can draw people towards positive change, regardless of where they are in the process.

Precontemplation: "I've Always Done It this Way"

We all have met that person, let's call him John, who just doesn't "get it" when it comes to safety. John is willing to take shortcuts and may even take pride in taking risks, despite exposure to

safety meetings, toolbox talks, and prevention campaigns and incentives. His attitude is one of "I've always done it this way and nothing bad has ever happened to me." Strict behaviorism would say that the way to move John to desired safety behaviors is to apply the right reinforcement. The SoC model states it is not so simple. Trying to modify behavior without awareness is unlikely to work in the long term: "overt action without insight is likely to lead to temporary change" (Prochaska & Norcross 528). John's awareness of and insight into his own beliefs and attitudes also require intervention if he is to shift to consistently making strong safety choices.

The SoC model proposes that people like John are likely in the *precontemplation* stage. Precontemplators do not see themselves in need of making change. They are often described by others as resistant or defensive. They might say things like "I've always done it this way and nothing bad has ever happened" or "safety is all luck" or "it's management's job to keep me safe." The awareness of making conscious choices about safety is low, which means the attitudes and beliefs that lead to their behavior remain unquestioned and unevaluated.

So how do we reach John? For those in the precontemplation stage, the aim is to raise awareness of what attitudes and behaviors are at play and the potential consequences of those patterns. Raising awareness requires individuals to take a look at their own cognitive processes: what are the underlying thoughts and feelings that influence the choices made? A number of avenues can raise awareness and encourage a move to considering change:

- Asking questions that stimulate the person's thinking about his or her own safety

    o "What effect would a safety incident have for me personally?"

    o "What do safe choices get me in my work?"

- Education about common attitudes that inhibit or promote safe behavior

- Providing examples and ongoing discussion of safe and unsafe behaviors that are personally relevant and engage the person at a cognitive and emotional level

In order for precontemplators to shift to contemplation, a connection must be made between the desired change and their own experience. Understanding the potential consequences or "what's in it for me" can facilitate openness to the idea of engaging in safety changes. This is where we begin to engage the hearts and minds of individuals as to why they would choose to be safe. As individuals become more aware of their own thoughts, feelings, and actions around safety, the next step of evaluating their current attitudes is possible.

Contemplation: "Maybe, Maybe Not…"

Terry is one of those folks who says, "Safety is important but let's face it, sometimes a shortcut is the way I'm going to go. When I think about it, I know what I should do, but I think sometimes it's okay to skip a few steps." Terry is in the *contemplation* stage regarding readiness to make a change in safety choices. Terry is not in that stance of "I don't see the issue" yet has not committed to a consistent course of action.

For individuals in contemplation, the key issue is the ambivalence of making change. Change, whether it is quitting smoking, allowing our children to make more independent decisions, exercising more, or always wearing a seatbelt on the worksite in every situation, requires energy, thought, and practicing different behaviors. Contemplating change requires

reevaluating thoughts, feelings, values, and actions. At this stage, individuals begin to weigh the pros and cons of making changes and take a look at their own process.

According to Prochaska & Norcross (526-527), two forms of re-evaluation are involved in contemplation:

- Self re-evaluation, including an assessment of what values will drive thoughts and actions

- Environmental re-evaluation in which individuals weigh the external effects of their behaviors, particularly on people or situations about which they care deeply.

In comprehensive CBS approaches, training and follow-up processes can provide opportunities for contemplators to explore the pros and cons of change. By engaging in interactive formats that invite individuals to reflect on and work with their beliefs that relate to safety, self re-evaluation is elicited. In a CBS approach, opportunities to actively discuss the ways that individuals think and feel about common safety scenarios allow people to tease apart the cognitive and emotional states that lead to behaviors. And in evaluating those thoughts and feelings, it becomes easier to see the effects of these attitudes on behavior and on self and others.

For example, in Terry's case, self re-evaluation would identify the underlying thinking patterns that lead Terry to feel comfortable with taking a shortcut. In addition, a CBS approach would engage Terry in assessing the potential consequences of taking safety shortcuts on those things most important to him such as his family, his enjoyment of hobbies, and his livelihood. Ongoing discussions that support continued re-evaluation embedded in day-to-day interactions can help move Terry from weighing the possibility of changing his attitudes and choices to preparation.

Preparation: "Staying Safe Is Up to Me"

You have probably met someone like Cheryl, who after a near-miss, began to focus actively on how she could stay safe in her work as a miner. "I used to just focus on following procedures. But that isn't enough, I want to be really conscious about safety moment to moment now." Previously she operated from the thought that since she knew all the right procedures, she could rely on just doing those procedures routinely. After her near miss and some opportunities to talk about how it happened, Cheryl began to look at all the situations in her everyday experience where her attention to risk might be compromised by acting out of habit rather than conscious thought.

Cheryl is a walking example of someone in the *preparation* stage. In this stage of change, awareness of and commitment to a desired change is present, previous experience is evaluated, and now attention focuses on clarifying the vision of the change and articulating what specific actions are required. Small steps toward the change can increase commitment and purpose for the individual. At this stage, the individual's intentions and actions are coming together as attitudes and desired behaviors are becoming aligned.

In the preparation stage of change, self-efficacy—the belief that one can effectively act in specific situations (Bandura, 191+)—is necessary in order to set the stage for sustained action. While preparers recognize that external forces have their influence (e.g., coworker's attitudes and behaviors, supervisor's expectations, etc.), they also have the belief that they can make conscious choices and take actions to support the change they desire.

A CBS approach can support and accelerate the engagement in positive change that individuals in the preparation stage are demonstrating. By attending to and actively connecting

the individual's cognitive processes to plan action steps, the likelihood of sustained changes increases. In the case of Cheryl, for example, having the opportunity to talk about her previous attitudes and learn information about complacency and operating on auto-pilot led to new thoughts and planning about how she could improve her own safety. She began adopting the attitude "safety isn't just following the procedure for the task, I also have continue to look for risk each step of the way." Next she began planning how she could enact that thought process:

- I can commit to thinking through my risk assessment form, instead of just checking boxes;

- I can ask myself "what do I need to evaluate now?" at each step in my work;

- I can take a quick moment whenever I catch myself drifting into auto-pilot.

Rather than relying primarily on developing external forces such as incentives or feedback from others' observations, a CBS approach that takes SoC into account assists individuals to harness their own thoughts, feelings, and beliefs and take conscious steps to stay safe. Intrinsic motivation, the "why" of making safe choices is articulated and the "how" becomes something that the individual owns.

Those in preparation have contemplated why they might want to make a change regarding safety and have made a commitment to doing so. CBS approaches provide the link between that commitment and action by focusing on the attitudes, or thoughts and feelings that lead from insight and desire to action. One example of how a cognitive-behavioral approach can bridge the two is facilitating individual's awareness of their attitude toward a situation or task. Once we become aware of our attitude we can evaluate whether that thinking pattern still works for us or whether cultivating a different attitude will help us reach our goal.

For example, Cheryl could choose to cultivate the attitude of "looking for opportunities to assess risk helps keep me safe." In operating from that thought, she is likely to be more consciously engaged in attending to her work, and is also more likely to engage in more robust and frequent risk assessments. She is also building additional positive attitudes around risk assessments with the actions she plans.

As in the example of Cheryl, a CBS approach adds the "hearts and minds" to the equation so pro-safety behavior is supported across the person's experience. This increases self-efficacy and also leads preparers to begin to take action and also look for ways to manage their environment to support their choices.

Action: "I'm Working on It"

When it comes to the stages of change, diving right into behavioral change may not work. Until awareness of the need for change, evaluation of what that change is, commitment to making change, and preparation for effective action steps are all present, jumping straight into action will be unlikely to be successful in the long run. Each stage lays important groundwork for determining how successful and sustainable changes in behavior will be. A CBS approach recognizes and addresses the different tasks each stage requires.

The *action* stage is that point in which individuals are modifying their behavior and engaging their environment in order to reach their goal of change. In terms of safety change, individuals like John, Terry, or Cheryl have identified the attitudes that may have compromised safe behaviors and have prepared for action by committing to and planning what steps they will take. However, the entire change process is not complete, although people often make the

mistake of equating action with change (Prochaska & Norcross, 521). As mentioned before, real change requires energy, commitment, practice and time.

To illustrate, let's take Randy, who has recognized his tendency to take "little" shortcuts like stepping up on a bucket rather than getting the ladder from the truck. He has worked to cultivate the attitude that "a job isn't right unless it's safe" and has committed to using the right tool or procedure for the task in his work and his home life. He recognizes that he has taken risks in the past that could have ended up with devastating consequences to his health, his family, his enjoyment of life, and his livelihood. Randy has been begun acting on these recognitions and his commitment by consciously choosing to take the time to follow safe procedures. However, he catches himself slipping back into "it will just take a minute" and "I can just tap this tight connection with my wrench" kinds of habits when he feels time pressures creeping up or others are pushing to get the job done at the end of the day, Randy has taken *action*—but has he made real *change?*

To effectively support individuals moving through action to maintenance, safety systems need to facilitate people gaining awareness of the pitfalls that can undermine positive actions becoming habits. CBS approaches address this need by focusing people's attention on potential obstacles, whether internal (e.g., negative attitudes or lack of coping strategies) or external (lack of support or reinforcement), that are likely to impede reaching their goals. By continuing to monitor what might get in the way and stay conscious of what will reinforce taking desired action, individuals continue to develop strategies that support change.

In terms of reaching consistent safety behaviors, CBS approaches converge with many BBS efforts to use existing processes such as toolbox talks, safety moments, risk assessments, task planners, safety coaching, and observational assessments with the aim of reinforcing and recognizing positive actions and providing feedback on how attitudes are being enacted in behaviors.

In the case of Randy, using verbal and visual reminders that reinforce his commitment to "safe choices mean excellence," getting feedback and recognition for making good choices, regularly talking with coworkers, and seeing supervisors stress the importance and value of following proper procedures will all continue to foster the continued practice of his commitment.

Maintenance: "That's Just the Way We Do It Around Here"

Tom is one of those front line leaders who routinely supports his crew's safety and "walks the talk" when it comes to "doing a job safely to do a job well." Over the years, he has strengthened his own thoughts and actions through learning from mistakes. He pays attention to the atmosphere around the work site and how it might influence his own thoughts and attitudes. Keeping an eye "on where my head is at" is one of the practices Tom has developed to watch for potential pitfalls in succumbing to time pressures or others' negative attitudes.

Moving from action to *maintenance,* a CBS approach can help people like Tom stick to their goals by reinforcing safe decisions and by continuing to assess their thoughts and behaviors. Maintenance is not a static stage whereby change is "done," rather it is a continuation of the change process (Prochaska & Norcross, 522). Individuals in maintenance have moved from having to consciously choose a particular action to that action becoming routine. As what was initially effortful and conscious change becomes habit, corresponding attitudes and behaviors become mutually supporting, and good safety becomes "the way we do it around here." The Toms of the worksite consistently demonstrate safe practices and influence others to do the same.

CBS initiatives will focus on transferring insights and commitment to everyday practice and capitalize on tying positive safety attitudes to existing safety processes and procedures, leadership, and safe environments. Highlighting the links between helpful attitudes and processes and procedures already in place, like pre-task planning or risk assessments, can strengthen individual and group safety behaviors. Positive reinforcement with recognition and incentives is likely to be viewed as aligning with people's existing attitudes rather than an external carrot to behave a certain way. And negative consequences for unsafe behaviors are less likely to be viewed as a stick with which people are being controlled.

Along with safe behaviors becoming routine, maintenance also involves recognizing when a "booster" is needed. Changes in leading indicators such as decreases in frequency of safety conversations or return of safety suggestion cards can help signal this need. A CBS approach would also suggest that assessing safety attitudes and the safety climate can help monitor the need for revisiting or reevaluating thinking patterns and behaviors.

Relapse: "Get Back on the Horse!"

As a senior leader of a large construction management project, Chris has focused on recognizing when he might slip into overemphasizing production rather than *safe* production. Previously he often transferred time pressures to his managers who often passed that pressure right on down the line. In looking at the attitudes he held around production, he had recognized one that said "when the chips are down, everyone just has to get 'er done." He committed to emphasizing that safety is paramount in all his communications and to practice asking himself and others how they might accomplish their task safely rather than focusing on production alone. As a crucial point in the project approached, Chris caught himself saying, "I don't care how it gets done, just do it!"

As discussed earlier, maintenance of a change is not a static process. Likewise, the overall stages of change model is not linear. The change process is better thought of as a spiral, where individuals progress from contemplation through preparation through action to maintenance, and then often *relapse* (Prochaska & Norcross, 522). In relapse, people return to earlier stages. If a person becomes focused on relapse as a failure, they may return all the way to precontemplation and even potentially give up (e.g., "always doing the exact procedure is just too time-consuming, it just doesn't matter that much"). Most people who are committed to change, however, are more likely to return to contemplation or preparation and look for ways to learn from the relapse (Prochaska & Norcross, 522-523).

When relapse in safety behavior happens, such as not buckling up onsite or taking a shortcut, CBS programs can help reframe relapse as a normal part of change and encourage individuals to view relapse as a learning opportunity rather than failure. For example,

- "So things aren't perfect, what do I need to tweak?"

- "What can I plan for better?"

- What do I need to do to get back on the horse?"

CBS approaches suggest that individuals can consciously take control of the frames from which they operate. Rather than seeing relapse as an indication that making change is too hard, we can evaluate what happened and make plans for how to handle that in the future. Processes like after action reviews and periodic self-evaluations can assist in preventing relapse or re-engaging in desired safety change. In the example of Chris, recognizing his desired actions were absent meant it was time to revisit what he sees as most important for the people working for him

and going back to address his communications again. He then went to his direct reports and took responsibility for the message he had sent and asked for feedback in the future. In doing so, he moved right back into action in his own process of strengthening his safety leadership.

Cognitive-Behavioral Safety: Meeting People Where They're At

A Cognitive-Behavior Safety (CBS) approach integrates how attitudes and behavior work together. Attitudes—the thoughts, feelings, values, and beliefs towards something—have a strong influence on whether we engage in one type of behavior or another. And likewise, behaviors influence our cognitive processes—if I as a welder always use my eye protection, even if I'm "just making a short cut with my torch," my attitudes toward safe operation are strengthened.

This interplay between attitudes and behavior becomes critical to take into account when we understand the predictable stages of change described by Prochaska & DiClemente. Thinking back to the various examples of different Stages of Change, each stage has its own task to be met, some emphasizing attitude change and some more related to behavior. An integrated CBS approach neglects neither internal cognitive processes nor safety behaviors, rather such an approach will address both.

Specifically, a CBS approach will provide the precontemplator the questions that can help raise their awareness of attitudes that can keep them safe…or expose them to harm. Those in contemplation or preparation can make conscious choices about the whats and hows of being safer that are personally relevant. For those who are ready to act, a full CBS approach will enable that individual to design action plans that will work and will provide positive reinforcement for strengthening their attitudes toward safety. And finally, a CBS approach will actively support sustained change and will help put relapse and re-engagement in perspective.

Contrasting with a CBS approach, traditional BBS approaches can fail if they intervene primarily at the action stage without have facilitated people moving through previous stages of change. Many primarily rely on systems of rewards and consequences, which can influence behavior, but often lack the potential of intervening at the cognitive level to leverage behavior change. On the flipside, a cognitive-only approach might likewise fail by over-relying on insight and awareness to change people's behaviors and initiatives can fizzle. A fully integrated CBS approach will take into account that companies will have people in all stages of change and can engage individuals at the level of why a particular change might be important to them all the way to helping those who practice safe behaviors continue to exert positive influences all around them.

Summary

Improved safety performance requires an understanding of the process of individual change. The Stages of Change model integrates the various stages involved (Prochaska & DiClemente, 390+) and proposes that sustained change requires that individuals cycle through each stage. The stages of precontemplation, contemplation, and preparation all involve cognitive processes that precede the stages of action and maintenance. This is the advantage of a CBS approach—we can intervene and influence earlier in the individual change process. Understanding the stages of change involved in people improving their own safety highlights the need for a CBS approach.

An integrated CBS approach does not contradict other approaches such as BBS, rather CBS requires effective behavioral interventions in addition to intervening at the cognitive level.

When each stage of change is adequately addressed, approaches such as CBS, Geller's (87+) and Krause's (25+) BBS systems, safety coaching using emotional intelligence (Wiegand, 391+), and dialogic approaches such as Burke et al. (235+) make sense as effective interventions along the change process.

Understanding the different stages of change enables organizations and leaders to design interventions that meet individuals where they are in the change process and facilitate their development. CBS approaches engage individuals along each stage of change, which supports companies to assist their employees in improving their safety choices. This is done at the precontemplation and contemplation stages by raising awareness of the "why" of safety and the attitudes we hold, and at the preparation stage by assisting in actively choosing what attitudes from which we will act. Such approaches boost intrinsic motivations for safety behaviors rather than relying primarily on external motivations. This type of motivation facilitates positive involvement in behavioral interventions in the action stage and the maintenance of positive safety change. A CBS approach also allows individuals to view relapse as an opportunity for continued learning rather than failure. When the full change process is supported all along the way, organizations and individuals will see sustained, positive safety change for the better.

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