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## **Using People Based Safety and Behavior Based Safety to Improve Safety Culture and Performance**

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### **Introduction**

Behavior-based safety (BBS) refers to a broad category of interventions where behavioral psychology principles are applied to change specific behaviors. BBS principles have been used (in the form of observation and feedback processes) with considerable success to reduce the occurrence of incidents and injuries, primarily by increasing the frequency of safe behaviors and decreasing the number of at-risk behaviors.

Historically, we have focused on improving safety by addressing the work environment surrounding employees. Fixing hazards, providing better tools and equipment, and developing and enforcing adequate procedures are all approaches that, understandably, have worked well at improving safety. But we have reached a plateau where relying solely on these approaches will produce only marginal gains.

Despite having a workplace ‘designed’ to reduce hazards, incidents and injuries still occur with alarming regularity. We have come to realize that 1) people are not perfect and will make mistakes despite their best intentions and working in the best of surroundings, and 2) the work culture often allows or encourages at-risk behaviors to be performed. In the last few decades, the behavioral approach was developed to focus on reducing hazards by observing employee behaviors in the context of their work culture.

Behavior-based observation and feedback processes focus on the at-risk behaviors to identify the root causes that influences the at-risk behavior; the processes are not intended to blame the employee. For example, a maintenance worker observes a coworker performing an at-risk behavior. During the ensuing discussion, the influences on the at-risk behavior should come to light. For example, the observee may reveal he never attended the training class for this particular task, or he doesn’t have the proper tools to perform the task safely, or he must bend in an awkward position to reach the part, or he feels production pressure and is rushing to finish the task quickly. Any number of system influences may have accounted for the at-risk behavior, and the observation tool helps identify them.

However, the observee may simply say he was distracted by personal problems or he simply was too lazy to perform the job correctly. In situations where there are no systemic influences, the feedback helps 1) remind employees to perform the job safely and 2) provides praise and recognition when employees change their behaviors.

### **Behavior is the Common Denominator**

No matter how safely our work places are designed, or how thoroughly we train our employees, or how harshly we enforce compliance, we will still have to deal with the uncertainty of human behavior. Even if we assume perfect compliance, good intentions,

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and a clear understanding of the job-related risks, people will make mistakes. This expectation should inform our approach to managing risks and improving safety performance.

The National Safety Council has estimated that the vast majority of incidents and injuries share at-risk behavior as a common denominator. The victims (or coworkers) performed an at-risk behavior that led to the incidents/injuries. This finding is not intended to blame employees, but to focus our analyses of the incident. We should be investigating what encouraged or allowed the employee to perform the at-risk behavior. The answer to that question will lead us to the real root causes and long-term solutions.

### *ABCs of Behavior*

Behavior is influenced by two distinct factors: *activators* and *consequences*. Activators precede behavior and serve to guide, prompt, direct, or catalyze a behavior. Informally, activators often tell us what we should be doing. While driving my car to work, roadway signs instruct me to comply with the speed limit, come to complete stops, and yield to oncoming traffic. However, other activators are influencing me to take shortcuts: I'm 20 minutes late for an important meeting and if I don't hurry, I'll be caught in the rush hour traffic generated by all the other morning commuters. Faced with these activators, what will I do? The answer comes by examining the consequences I expect to gain or avoid on this morning's commute.

Let's examine the potential consequences of speeding. A negative consequence would be to receive a speeding ticket from the local police officer. Compare that negative with the positive consequence of saving time. Which of these two consequences is more powerful? If you selected the 'positive' consequence in this example, you're right. While receiving a ticket is a very aversive consequence, I expect that I can avoid a speeding ticket (largely because my own experience justifies this belief). Additionally, my experience tells me I can save a few minutes by increasing my speed. I have driven this route daily for the last 10 years and I know that if I drive 15 miles over the posted limit, I can save 15 minutes. My experience tells me the chances of getting a ticket are quite low compared to the very good chance I will save time.

In the example above, the *probability* of the expected consequence greatly influenced my behavior. In addition to probability, we also consider the *timing* and *significance* of the consequence. Consequences that occur sooner rather than later are more influential, and consequences that are personally significant are more motivating than those that are insignificant. In the speeding example, I expect to save time, I'll save time immediately, and those 15 minutes are significant. *If* I got caught, I would receive the ticket immediately, and it would be significant, but because I don't expect that to occur, I don't worry about the timing or the significance of the ticket. To make matters worse, many other drivers are engaging in the same at-risk behavior, implicitly encouraging me to continue my speeding.

Daily, employees are faced with similar decisions to perform safe or at-risk behaviors. A behavior-based observation and feedback process can provide the initial analysis tool to determine the root cause for the at-risk behavior, and the feedback can serve as a tactful,

supportive reminder to employees to take the extra time and effort to perform the behavior safely.

### **Behavioral Observation and Feedback**

One of the most common applications of BBS principles to safety takes the form of an observation and feedback process (BOFP). The process includes several steps. Employees observe coworkers using a brief checklist that guides their focus. After the observation (which can take from 5 – 20 minutes on average), the observer reviews his or her observations with the observee. Positive feedback is given for safe behaviors and corrective feedback is given for any behaviors thought to be at-risk. The discussion should reveal the systemic or individual influences on the at-risk behavior (e.g., insufficient training vs. momentary distraction due to personal problems). If anything can be fixed immediately, the employees should attempt to do so; if that is not possible, they would contact the appropriate person(s) to respond. Data from the observations are entered into a database and analyzed for potential trends, and graphs of the aggregate data are shared with work teams on a regular basis (typically during safety meetings providing material for discussion). A more detailed description of these steps follows, as well as criteria for successful implementations.

#### *Developing the Checklist*

A cross-organizational Implementation Team (IT) is selected (at least 50% wage, if not more), and should include at least one (but possibly several) members of management. The IT will guide the implementation of the BOFP throughout the organization. After receiving sufficient education and training, the IT develops the initial generic checklist, by examining several sources, such as injury and near miss reports, and job safety analyses. The IT selects the most important categories of behaviors (usually 5-7 categories) they think are most critical and includes them on the checklist. Next, specific behaviors are listed within each of those categories. For example, the category of *Body Position* might include specific behaviors such as *Lifting*, *Bending*, and *Twisting*. Then the Team determines which demographic information will be included on the checklist. Information such as *Observer Name*, *Date*, and *Area* are all commonly used. Finally, the IT designs the format of the checklist, depending upon their expectations for how it will be used. It can be as small as a 3” x 5” index card or as large as an 8.5” x 11” sheet of paper.

#### *Using the Checklist*

Once the checklist has been designed, the Implementation Team develops guidelines for using it. They determine where blank checklists may be acquired, and where completed checklists may be deposited. They suggest how many observations should be conducted within an area by each team or employee. And they suggest how long the typical observation should last. Finally, the IT determines how they’ll analyze the data, and how they’ll share information with the organization.

#### *Conducting the Observation*

Before observing a coworker, the observer should ask for their permission (please see the Voluntary section for the rationale). If granted, the observer watches the observee for a short period (10-15 minutes seems to be the average for most organizations). During the

observation, the observer records what he or she sees. For each safe behavior seen, the observer makes a check mark in the Safe column; for each at-risk behavior witnessed, a check mark is placed in the At-Risk column. Behaviors seen more than once would have the corresponding number of check marks entered into that particular category. Comments would also be added to clarify anything seen by the observer, as well as serving as the 'script' for the observer's feedback.

#### *Giving Feedback*

After the observation is complete, the observer should give tactful, non-threatening feedback to the observee. The observer would provide praise for safe behaviors and corrective feedback for any at-risk behaviors. The observer should review the entire checklist with the observee, and should ask open-ended questions to encourage a meaningful dialogue between the observer and observee. Observee comments may also be added to the checklist where relevant. Upon completion of the discussion, the checklist should be deposited into a collection box to await pick-up by a member of the Implementation Team.

#### *Data Entry and Analysis*

Data from the checklist should be entered into a database by a member of the IT. The Team then analyzes the data during their monthly meetings. Team members would examine the data using a structured, problem-solving methodology similar to that found in continuous improvement approaches such as Total Quality Management and Six Sigma. Based on the IT's analysis of the data, they may determine that a specific checklist is needed to focus improvement efforts on a particular behavior (lifting), task (replacing a pump), position (operators), or injury (burns). Results from the observation and feedback process should be communicated regularly with the organization.

#### *Sustaining the Process*

The observation and feedback process should be evaluated regularly by internal and external sources. Members of the IT should review their procedures often and seek input from employees throughout the organization for ways to improve the process. In addition, the IT should consider having outside experts periodically evaluate the observation process for improvement opportunities. Finally, the IT should remain in regular contact with other ITs to benchmark their respective progress.

#### *Participation Should Be Voluntary*

As implied earlier, we recommend participation (as an observer and observee) in the process be voluntary. Before someone is observed, they must grant their permission. While this may seem puzzling at first, the advantages are numerous. First, the process cannot be 'employee-owned' if they don't have the chance to opt out. Second, it expands the non-punitive message of the process: this isn't a spy program. The intention is to help people recognize risk, perform the task more safely, and reveal any system-related influences on at-risk behavior. Third, it increases trust between the observer and the observee. And fourth, gaining the observee's permission makes it easier to give him feedback, because he has given consent. Without that permission, it would be easy for the observee to ignore or mistrust the 'unsolicited' feedback.

## Success Criteria

There are several key characteristics of a successful observation and feedback process. The table below lists these characteristics and each is briefly explained.

Success Characteristics	
Customized	Employees first
Employee-owned	Non-punitive
Confidential	Non-directive
Anonymous	Dynamic

### *Customized*

The process must be adapted to the unique needs of the organizational culture. This works best when the BBS principles are well-understood and fitted to the culture, as opposed to the culture being forced to fit the constraints of a particular program. This customization can occur with outside consultants helping the organization design the process or with the consultants training organizational personnel to be the ‘in-house experts’ who then can help design the process with remaining sites, departments, or work teams.

### *Employee-owned*

The observation and feedback process has the best chance for long-term success if employees perceive they actually own the process. This can best be accomplished by giving employees a great deal of influence when the process is selected, designed, and implemented. This typically occurs when an Implementation Team comprised of mostly wage employees (with some management representation) designs the process after appropriate education and training.

### *Confidential*

Employees will find it difficult to participate in the observation process if they feel the observation data isn’t confidential. With a guarantee of confidentiality, employees will be more likely to agree to be observed, and be more likely to perform their ‘normal’ behaviors.

### *Anonymous*

Similar in concept to the previous issue, employees are more likely to support a process that doesn’t include their individual name, allowing the data on a checklist to be tracked back to them. Instead, data is typically tracked by demographic information such as date, time, and/or area. As employees become more comfortable with the process and see no one is being punished as a result of the data, they will become far less anxious about having their name on a checklist. In fact, many mature observation and feedback processes include the name of the observee, with no ill effect.

### *Employees first*

Start with wage-to-wage observations. Managers and supervisors are often asked not to participate as observers during the first three-six months. As employees become more

comfortable participating in the process, they'll be more comfortable with their supervisors observing them.

#### *Non-punitive*

Punishment should not be an outcome of the observation and feedback process. The only outcome of an observation is to give and receive feedback, and to fix any identified hazards. In some situations it may be necessary to stop the job if you feel the observee is in danger. Please see the Discipline section for a more complete description.

#### *Non-directive*

The intent of the observation is not to have the observer tell (or 'direct') the observee how to perform their job. The observer may not know. Instead, the feedback is intended to merely point out any behaviors that may place the observee at-risk, and to discuss safer alternatives. This allows observers to travel outside their areas of expertise and still perform high-quality observations, as well as making it easier for the observee to accept the feedback without becoming defensive.

#### *Dynamic*

The observation and feedback process should remain dynamic, evolving and maturing to meet the needs of the organization or team. The process may evolve by changing the type or extent of checklists, changing the length or frequency of observations, and otherwise adapting the process to meet the changing needs of the group.

We've discussed several key principles from behavioral psychology that apply to the safety culture, but that is only part of the story. We should also consider the internal person factors that influence our behavior. Behavior-based safety gives us the tools and the techniques to improve safety, while person-based psychology shows us how to create the desire and the passion that will be needed to help this process succeed.

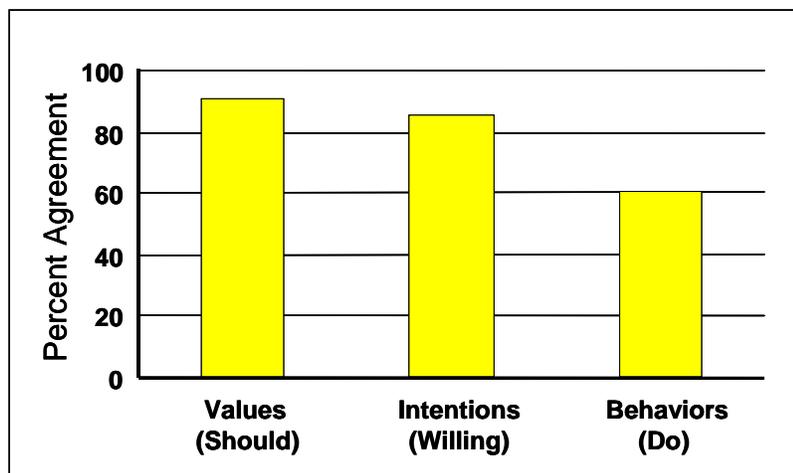
### **Person-Based Psychology and BBS**

When individuals feel good about themselves, their work teams, and the organization as a whole, they are more likely to go out of their way to assist others (i.e., to actively care). Certain person factors (or expectancies or mood states) influence people's safety-related behaviors and their willingness to intervene on behalf of another's safety. In particular, five person factors have been shown to predict actively caring behavior: self-esteem, self-effectiveness (known in the research literature as self-efficacy), personal control, optimism, and belonging.

In our research, we have found that people often possess the right values and intentions for safety. The problem occurs when they are faced with the opportunity to act on those values and intentions. Consider people's responses to the following set of statements:

- *Employees should caution a coworker if they see them performing an at-risk behavior.*
- *I would be willing to caution a coworker if I see them performing an at-risk behavior.*
- *I often caution coworkers when I see them performing at-risk behaviors.*

Most people respond favorably to the first two statements, indicating most have the necessary values and intentions. But far fewer people agree with the final statement, indicating there are personal and organizational barriers to this critical behavior. The barriers are numerous (e.g., not my job, I'll get a negative



reaction, don't know how to give tactful feedback, don't know the job he's doing so I can't give feedback), but in all cases, we can minimize these barriers by increasing employees' person-factors (e.g., self-esteem, belonging, and empowerment).

Designing, implementing, evaluating, and sustaining a behavior-based observation and feedback process can help employees feel more engaged in, and possess greater ownership over the safety culture. When we help clients design and implement observation and feedback processes, we build in as many options as possible to increase these necessary person factors.

### Application of BBS Principles to Management Systems

Traditional safety management systems and activities (e.g., incident and near miss reporting, incident investigations, safety meetings, safety committees, safety accountability processes, safety reward and recognition programs) often are not optimal and may actually undermine safety culture change efforts.

Each of these safety management systems has an important contribution to make in terms of improving workplace safety and influencing the organization's safety culture. At best, when the system is poorly designed or operating ineffectively, its benefits will be lost. At worst, a poorly designed, badly implemented, or ill-functioning system can actually have a destructive influence on the organization's overall safety culture. To further compound the situation, these systems are interactive and, in many cases, overlap. For example, *hazard identification and correction* requires an atmosphere fostering *employee participation*, sufficient *training* so employees can recognize and correct hazards, ample *communication* of the hazard, and its sufficient resolution. Poor features of one system may have negative influences on other systems, making the problem areas more difficult to isolate and correct.

The central themes of a Total Safety Culture (e.g., employee involvement in safety, focus on the process of achieving safety, emphasis on behavior as only one of many *parts* of the safety system) can serve as a metric against which to measure and modify an organization's safety management systems. The same principles of psychology which underlie the behavioral observation and feedback process are equally applicable for creating other safety management systems motivating and reinforcing safe work

practices. For example, in many organizations, *reward* or *reinforcement* in the area of safety focuses on outcomes (i.e., injury rates) and avoiding failure. If employee incentive programs and/or supervisor performance evaluations are based primarily on injury rates, it is unreasonable to expect those employees to embrace an open injury reporting system or to feel comfortable being observed performing risky behavior which may result in injury.

If assessment of existing safety management systems shows deficiencies, two options should be considered. First, look at the actual practices of the company, department, or team to assess the strengths or weaknesses. For example, *safety training* concerns may be caused by a variety of issues, each with different solutions. Safety training may be too short, too complicated, poorly conducted, or too general for application on the job. Training may be given by employees who lack credibility, or may be conducted on required overtime either for the trainee or his counterpart back on the job. The training itself may be top notch but is treated by the employee's supervisor as a nuisance or as secondary to "getting the work done." All these issues and more may give training a bad reputation and, more importantly, cause it to be ineffective at maintaining or improving employee safety and health.

The second option is to analyze how *perceptions* of the system are being managed (or not managed). For example, a *safety suggestion process* may be seen as beneficial only by those whose suggestions have been implemented or have received feedback. Suggestions may be actively solicited, objectively evaluated by a cross-functional team of employees, amply funded, and quickly acted on *but* poorly communicated to the rest of the workforce. Employees may negatively evaluate this system, but the situation is addressed easily without revising the entire safety suggestion system.

A second system which is often very telling of an organization's culture is *incident reporting and investigation*. The level of first aid cases and near miss reporting is higher in organizations where employees share trust and a problem-solving perspective. If incident reporting is suppressed, investigations may be less than thorough, communication of findings may be spotty, or discipline may be feared. Initiating and maintaining a peer observation and feedback process in this type of culture takes more time, effort, and patience.

Organizations serious about changing their safety culture should critically analyze each system to be certain it is aligned with Total Safety Culture principles. Even when weaknesses are identified, organizations should be cautious about overhauling existing safety management systems too abruptly. For example, employees accustomed to receiving "a payoff" for working a certain length of time without an injury may be resistant to a change in incentive programs. The redesign process is not a quick one and some systems may transition through several intermediate stages before they reflect employee ownership, achievement orientation, or a systems perspective.

### Discipline and BBS

Always an emotional topic, discipline becomes even more relevant when discussed in light of a behavioral observation and feedback process. The success of an observation and

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feedback process relies on the support of the rank and file wage employees. If they think discipline is a possible outcome of the observation process, their participation isn't likely, and what little does occur, is likely to be artificial.

There are two critical issues. First, observation data cannot lead to any negative consequences. If an observer reports a peer's at-risk behaviors to management or if a member of management requests to see individual data from somebody else's observations, then large-scale participation is not likely. Management should be able to view anonymous group data, but should refrain from viewing a specific individual's data.

Second, if management participates as observers (and there are pros and cons for either position), they should treat the observation as a 'no fear' zone. In other words, if they see the observee performing non-compliant behavior (during the observation), the management observer should stop the observation, place the checklist in his or her pocket and coach the employee. Outside these observations, the normal organizational response by management is in effect. But during the observation itself, employees must feel confident they won't be persecuted after volunteering to be observed.

### **Social psychology and BBS**

In addition to the behavioral principles discussed here, there are principles derived from social psychology that influence our behavior. Several are reviewed here—not to help you manipulate others, but to make you aware these principles exist and can help you actively care for friends and coworkers. A note of caution: if others perceive you are insincere or simply using a "technique" to manipulate them, these valuable principles will be circumvented and you will have most likely damaged your credibility and the organization's safety initiative beyond repair.

**Consistency** After we make a decision (particularly if we verbalize it to others), we try to act in ways consistent with that commitment. We don't want to be seen as 'inconsistent' (or worse, 'hypocritical') by others. Not adhering to a previous verbal commitment or exhibiting behavior inconsistent with an opinion voiced earlier is unappealing to most of us. Giving safety-related feedback to a peer, making a public statement supporting safety efforts, or even receiving sincere praise after safe behavior can all lead to increased personal safety performance as we strive to conform to our earlier decision (or live up to the expectations of others).

**Reciprocity** This principle is commonly understood as the "*you help me and I'll help you*" phenomenon. We feel pressure to reciprocate someone's treatment of us in the same way and at the same level of intensity. Using a negative example, if you insult me or cause me grief, I'll feel the urge to 'even the score' by doing the same thing to you. On a more positive note, giving praise for safe behavior taps into this strong desire by encouraging others to return the rewarding feedback. Even if the object of your feedback cannot respond to you (you've gone home), he or she will feel an urge to provide supporting feedback to another in your absence.

**Conformity** We tend to conform to the norm expressed by the group's majority. Those who go against the grain invite the disapproval of the group. This principle is even more effective if the group itself develops the performance standard instead of management. If

enough employees perform safety behaviors or actively care for their peers, others will feel compelled to follow their example and conform to the new standard.

**Scarcity** We tend to desire things that are in short supply. As availability or opportunity decreases for something we covet, demand increases. If we can present opportunities to participate in safety activities (e.g., joining safety teams, conducting observations, revising a job safety analysis) as being rare, limited, or special, we can potentially create greater demand for participation.

**Ingratiation** We tend to follow the advice or examples set by people we like and respect, rather than those we dislike. This doesn't mean we should try to be everyone's best friend, but it should influence how I interact with others. Tactful, respectful, and non-threatening feedback will leave others with a favorable impression of me, making it easier for them to comply with my safety feedback and ensuring I'll have the chance to give them feedback in the future

### Conclusion

When designed and implemented correctly, BBS can be very effective at helping the organization reduce injuries and incidents. Figure 1 below shows the average percent reduction for a sample containing 34 of our clients during consecutive years after the implementation of their observation and feedback process.

### Contact

For further information about Safety Performance Solutions, please go to our website at: [www.safetyperformance.com](http://www.safetyperformance.com) or contact us at Tel: 540.951.7233 or [safety@safetyperformance.com](mailto:safety@safetyperformance.com).

Figure 1: Graph shows the average percent reduction in recordable injury rates (by SPS clients) in consecutive years after implementation of SPS' observation and feedback process.

