

Behavior Optimization

in Safety
and Health
Management

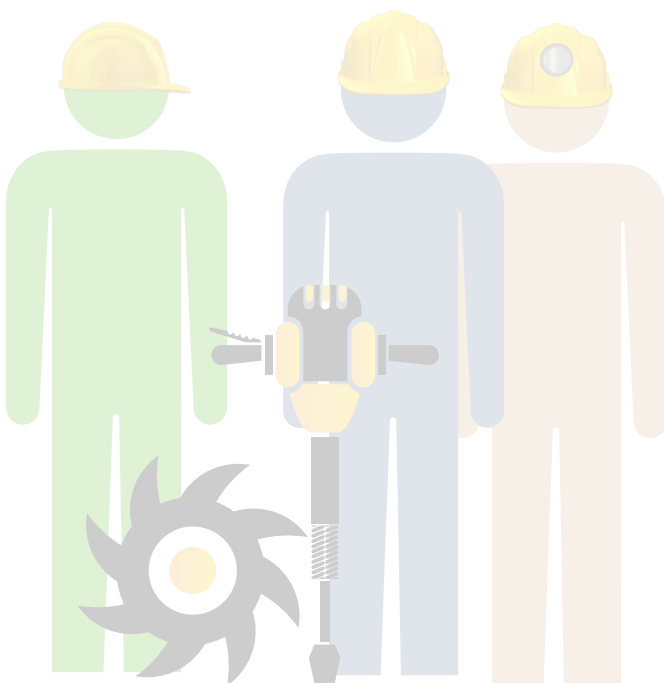


Behavior Optimization

be•hav•ior | bi'hāvyer | (Brit. **be*hav*ior**) op•ti•mi•za•tion | ɔ̄pt̩mī'zā SH ən |

noun:

A system for maximizing positive actions and minimizing negative or unsafe actions.



Introduction



Human behavior is an integral part of mine safety and health. Individuals often take unnecessary shortcuts or expose themselves to unnecessary risks. Mining companies that work to reduce exposures to risk by encouraging their employees to do the right thing generally have fewer and less severe injuries.

The ABC Model

Underlying behavior optimization interventions is what is sometimes referred to as the “**ABC model of behavior**”:



The following explains what the terms mean. More importantly, it describes how to use these concepts to improve safety performance as part of an overall safety and health management system.

Antecedents are events, signals or thoughts that occur before a behavior is exhibited. They cause us to react with a certain behavior or set of behaviors. Some common examples of antecedents are a telephone ringing, an alarm, a safety warning sign or direction from a supervisor.

Here is an example: Antecedent - *The telephone is ringing.*
Behaviors - *Pick up the receiver and say something.*

Behavior is followed by conscious and subconscious **consequences**. The consequences can be negative or positive, and they have a major impact on whether we repeat the behavior the next time.

Other than reflex actions, the ABC model demonstrates that behavior—both safe and unsafe—is learned and is not inherent. **This is especially true if the consequences for a desired behavior are immediate, positive and certain.** The desired behavior is less likely to be repeated if consequences are delayed, uncertain and negative.

Behavior optimization techniques use the basic principles in the ABC model to influence workplace behavior so the likelihood of a safe behavior is increased and an inappropriate behavior is decreased.

Behavior Optimization Techniques

There are many types of behavior optimization techniques a company can use to reduce employee exposure to risk and improve safety. Regardless of the technique adopted, strong leadership, management commitment and a positive safety culture are all necessary prerequisites. The following is a discussion of techniques most commonly used to optimize behavior:

- 1 Observation and Feedback
- 2 Positive Reinforcement
- 3 Negative Reinforcement
- 4 Corrective Discipline
- 5 Leadership and Culture

1 Observation and Feedback ¹

Behavior observation and feedback is a structured process that commonly relies on trained observers conducting observations of their co-workers as they perform a task. Following the observation, the observer provides feedback on the safe and/or at-risk actions they observe. The focus is on reinforcing the co-worker’s safe behaviors and/or encouraging them to avoid at-risk behaviors in the future. Successful behavioral observation efforts adopt and adhere to a **“no name-no blame-no sneak-up”** policy as an integral part of the observation and feedback process.

no
name

no
blame

no
sneak-up

A few words about **“barriers”**

When unsafe behavior is observed, the observer should ask three key questions to determine if there is a “barrier” to safe performance.

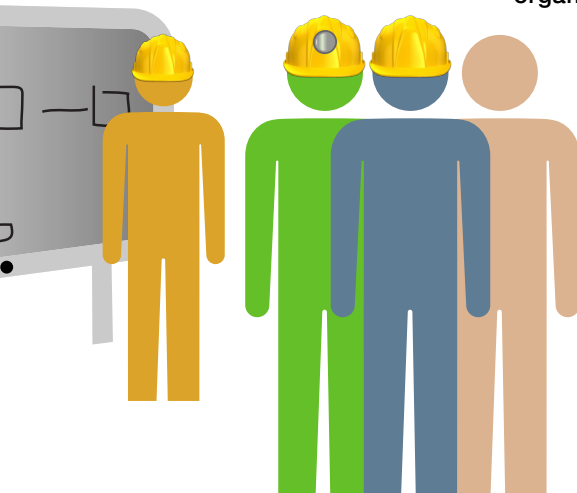
Those questions are:

- Was the required safe behavior **enabled** (Within the employee’s control)?
- Was the required safe behavior **difficult**?
- Was the required safe behavior **impossible**?

If a safe behavior is difficult or impossible for the employee, then it is outside the employee’s control, and no measure of behavior modification can help. Rather, removing the barrier means a systems, process or cultural solution is necessary. **That is why integration of behavior optimization with other organizational, leadership and cultural diagnostics is critical to success.**

Footnote

¹ Certain phrases and examples used in this section with permission from Behavioral Science Technology, Inc. (BST)



1 Observation and Feedback

Behavior **observation** involves five basic steps:

- a.** Get organized and resourced
- b.** Develop the behavioral safety checklist
- c.** Conduct training in observation and feedback
- d.** Conduct observation and feedback
- e.** Collect and analyze data to improve the overall process

The observer should conduct the observation without being a distraction or obtrusive.

1 Observation and Feedback

You should always discuss the availability of alternative behaviors to replace the at-risk behavior.

To initiate an observation, a trained observer will ask permission of a co-worker to observe them during their work. If the co-worker is willing to be observed (they may not, if the observation might lead to distraction and more risk), they go about their work. In turn, the observer should conduct the observation without being a distraction or obtrusive.

Typically, an observation will range from 10-15 minutes. At the completion of the observation, the observer identifies the positive aspects of the co-worker's behavior and provides feedback to reinforce what he/she is doing right. Then they provide feedback in a supportive and non-critical way about what behaviors need to be re-directed. If you want an unsafe behavior to diminish, you should always discuss the availability of alternative behaviors to replace the at-risk behavior. If there are barriers to safe performance, they must be removed to enable the co-worker to work safely.

The exception to the positive and supportive feedback is any instance in which the observer sees an imminent danger. At that point, the observer must intervene using whatever means necessary to prevent an incident.

Observation/feedback interventions are most effective when viewed as long-term processes. Successful processes focus on collecting trending data on safe and at-risk behaviors. Data regarding baseline frequency of a specific behavior or behaviors, the number of safe and at-risk behaviors observed, the type of work being performed during the observations, as well as any other exposure data are collected and analyzed to identify appropriate improvement interventions.

Typical considerations include:

- Is the percentage of safe behavior increasing relative to baseline?
- Is the percentage of unsafe behavior decreasing?
- Have barriers to safe behavior been addressed?
- Have improvement interventions been developed and implemented?

1 Observation and Feedback

This process is highly customizable, and there are many vendor-sponsored approaches offering variations in its development and execution. Any company can use observation and feedback, but those that use it successfully will have certain prerequisites in place to provide the greatest potential for full integration and success.

This process is highly customizable.

These include, but are not limited to:

- Enlightened leadership
- A good basic safety management system
- A positive safety culture
- An observer training program

Observation and feedback are not the only methods to identify and prevent at-risk behavior, but are important tools in a company’s overall behavior optimization strategy and system. What makes the observation and feedback work is consistent, positive and relevant feedback and positive reinforcement, organization support and a strong safety culture.



Consistency

Positive Feedback

Relevant Feedback

Positive Reinforcement

Organizational Support

Strong Safety Culture

Making Observational Feedback Work

2 Positive Reinforcement

Rewards should not be payoffs for performance, but rather a means of recognizing people for their special efforts.

Positive reinforcement is a very effective means of providing consequences (the ABC model) that increase the frequency of safe behaviors. It requires workers to be reinforced in a timely manner for safe behaviors that are consistent with positive safe performance or are taught new and more appropriate behavior as an alternative to one that is unsafe. Positive reinforcement requires a working knowledge of these principles and the time to intervene. Positive reinforcement can be exercised by co-workers and managers.

There are many forms of positive reinforcement: simple praise and approval, reward, modeling and self-monitoring, among others. These types of positive consequences can be delivered in formal or informal processes and can be specific to certain designed behavior or general to a group of behaviors.

Companies serious about this behavior optimization tool should consider providing training to enhance their ability to maximize effectiveness.

The delivery of a reward can be more influential than the material consequence of the reward. Rewards should not be payoffs for performance, but rather a means of recognizing people for their special efforts. Rewards can be either monetary or symbolic.

Heavy reliance on monetary rewards for safe performance can quickly degrade into an entitlement and a de-motivator for open and transparent incident reporting. As such, caution should be used with monetary rewards.

To maximize the impact of positive reinforcement, it's important to target a specific behavior and deliver praise soon after you observe the behavior.

Be genuine and use "I" statements, such as "I really appreciate you took the time to show your team how to correctly finish that job." Resist bringing up other matters and relate the behavior to a higher order quality such as leadership, integrity or trust-worthiness.



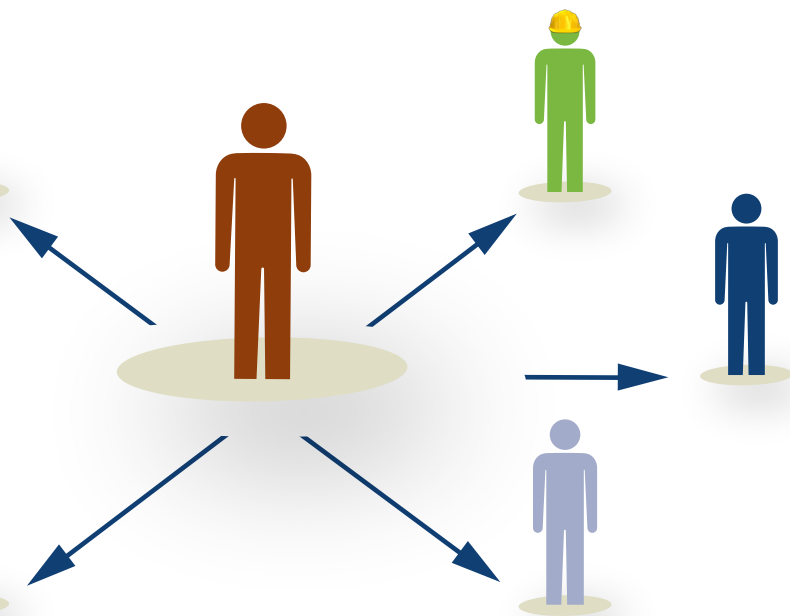
3 Negative Reinforcement

Negative reinforcement can also be used to promote safe behaviors.

Example: The buzzer that sounds if you are descending the stairs too quickly. The buzzer is a negative consequence that is meant to slow you down to safe behavior.

Negative reinforcement is often confused with discipline for an unsafe or at-risk behavior. They are not the same, and confusing one with the other can limit the tools used to optimize behavior. Negative reinforcement must be virtually instantaneous in order to be effective in promoting safe behavior.

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4 Corrective Discipline

Discipline should be conducted in a fair and equitable manner.

First, it is important to understand corrective discipline is not an appropriate tool to use in the observation and feedback process, which should adhere to the “no name-no blame-no sneak-up” commitment. A sure way to undercut the observation and feedback process is to link the information from observations to discipline.

Corrective discipline is the process of using increasingly severe steps or actions when an employee fails to correct a problem after being given a reasonable opportunity to do so. The underlying principle of sound corrective discipline is to use the least severe action necessary to correct the undesirable behavior. Increase the severity of the action **only** if the condition is not corrected.

While necessary to ensure all employees understand the limits of behavior relating to the most critical safety procedures and rules, it is well documented that behavioral techniques that **rely** heavily on discipline can drive reporting of incidents underground, downgrade safety cultures, minimize trust and contribute to a number of other difficult problems. When discipline is used too often, extinct behaviors are more likely to reappear in time.

Corrective discipline normally involves several steps, beginning with a verbal warning, progressing to a written warning and then involuntary termination. These actions should always include a management review to ensure the violation wasn’t promoted or influenced by management culpability, e.g., inadequate training, poor direction from supervision, etc. Some mining companies use “cardinal” or “zero tolerance” rules in which even a single violation can result in termination because of the critical risk these rule violations represent.

It is often the case that corrective discipline in a unionized workplace will require integration of the discipline policy and the collective bargaining language.

Discipline should be used at the minimal effective level, e.g., does every incident result in discipline? And discipline should be conducted in a fair and equitable manner. This means procedures and rules should be written clearly and concisely, communicated clearly, broadly and repetitively, and enforced with consistency, fairness and without favoritism. This will build trust and a sense of organizational justice—two critical characteristics for enhancing safety culture.



5 Leadership and Culture

Any work that focuses on behavior optimization must consider the role of leadership and culture in making change effective and sustained. Common behaviors reflect the culture. If the culture emphasizes the use of a safe behavior over at-risk behavior, employees are more likely to act safely in order to adhere to the cultural mores, whether consciously or subconsciously.

With this in mind, there are several things companies can do to use leadership and culture to optimize behavior.

If the culture emphasizes the use of a safe behavior over at-risk behavior, employees are more likely to act safely.

- **First**, ensure leaders understand behavior optimization principles. Simply by knowing the ABC model and how it can affect behavior, leaders can begin to filter their own decisions and actions so they don't act as an antecedent for at-risk behavior. They can begin to consider the consequences of their decisions on employee behavior, e.g., sending contradictory directions, such as, "I want you to work safely, but do whatever you can to increase production at the end of the month so we can make budget."
- **Secondly**, leaders are the best modelers of safe behavior in any company. Employees will often watch the behavior of their managers/leaders, and if they see them doing something unsafe (not wearing a seatbelt or PPE), it is much easier for the employee to justify at-risk behavior, even if the manager/leader behavior is unintentional. Being an effective safety leader means being aware and in control of your own safety behavior. As the old adage goes, "Lead by positive example and others will follow."
- **Lastly**, actively enhance your safety culture and you will indirectly improve the percentage of employees who exhibit safe behavior on a regular basis. People behave the way they do because they interpret and make sense of their situation, define their own goals to serve their group or personal interests and act accordingly. When the situation, goals and reinforcement mechanisms are shared, behaviors tend to be similar. You could say that behavior is a function of culture, i.e., company culture is a very strong antecedent for safe behavior. In turn, leadership behavior and established systems influence culture.

Much of our behavior and thinking is shaped by culture.