

**Personality and Behavioral Consequences:
*Differential sensitivity to rewards vs. penalties***

A number of my more recent *ISHN* contributions have introduced specific personality factors that can impact industrial safety. In April 2004, I discussed the relationship between anxiety and injury prevention, with reference to a classic measure of high vs. low anxiety. Then in July 2004, I introduced the five personality factors discussed most consistently in current textbooks on basic psychology—Openness to experience, Conscientiousness, Extraversion, Agreeableness, and Neuroticism (OCEAN). Representative questions from an assessment device used to measure each of these person factors were included.

More recently (January 2006), I addressed the well-known Type A personality trait, explained a distinction between Type A *behavior* and Type A *emotion*, and revealed how this personality factor influences injury-proneness.

My *ISHN* contributions for the previous two months (June and July, 2007) covered the True Colors approach to understanding four basic personality types, from assessment to practical application. This article targets yet another person factor relevant to the human dynamics of injury prevention—individual sensitivity to rewards vs. penalties.

Evidence-Based Theory

Working initially with animals, physiological psychologists have identified two distinct neurological structures and systems—the behavioral inhibition system (BIS) and the behavioral activation system (BAS). The BIS is sensitive to signals of possible negative consequences and inhibits behavior that may lead to undesirable outcomes. In contrast, the BAS is sensitive to cues for rewarding consequences, and facilitates the initiations of behavior that can gain positive consequences. Thus, the BIS is presumed to regulate avoidance behavior, while the BAS controls approach behavior.

The researchers connect the BIS to anxiety or fear of failure and the BAS to impulsivity and a need to achieve soon, certain, and positive consequences. I have addressed the need to avoid failure vs. achieve success in prior *ISHN* articles (February & March, 2004). Here we're relating these distinct motivational perspectives to independent neurological systems. Furthermore, and most interestingly, physiological psychologists have related specific brain activity in humans to differential BIS vs. BAS sensitivities. In other words, people vary significantly with regard to their susceptibility to positive reinforcement vs. negative reinforcement and punishment. Wouldn't it be nice to reliably measure this person-based distinction?

Distinguishing Sensitivity to BIS vs. BAS

Researchers have developed and tested a psychological survey that measures an individual's *independent* BIS vs. BAS motivational systems. The term "independent" is important here, because a person's sensitivity to BIS does not influence sensitivity to BAS. An individual can score high on both dimensions, reflecting significant impact of both positive and negative consequences. This outcome is analogous to the *overstriver* who is simultaneously motivated to both achieve success and avoid failure (see my *ISHN* column in February, 2004).

A *success-seeker* would score high on BAS and low on BIS, while a *failure avoider* would score low on BAS and high on BIS. Of course, it's possible to score low on both the BAS and the BIS, indicating low motivation to achieve positive consequences or avoid negative consequences. It is tempting to place this person in the *failure acceptor* category of the 2x2 matrix defined by answering yes or no to two questions: 1) Do you seek success?, and 2) Do you avoid failure? But, this classification could be incorrect and misleading.

The BIS and BAS scales measure people's attention to external or extrinsic consequences. However, some people perform more for intrinsic than extrinsic consequences. They are not controlled by external contingencies. As I've discussed in prior *ISHN* articles (e.g., January and April, 2001) these individuals are self-directed. They set personal goals and reward themselves internally when they achieve. They might also perceive significant intrinsic or natural reinforcers for their behavior. Therefore, a low BIS and BAS score does not necessarily indicate lack of motivation, but might simply reflect predominance of self-directed over other-directed behavior.

An Assessment of BIS and BAS

Have I piqued your interest in this particular personality dimension? Perhaps you're curious about your sensitivity to extrinsic positive and negative consequences. The 12 questions in the sidebar were selected from the research-based assessment tool of 36 BIS questions and 31 BAS items. Although these are the items which show the greatest statistical connection to the measured construct—BIS or BAS—they do not provide a valid measure of your propensity to be influenced by positive and negative consequences. However, you can answer the questions to estimate your BIS and BAS sensitivities and to increase your understanding of this personality construct.

<Insert the 12 BIS/BAS questions here>

Scoring the BIS/BAS scale

Your BIS and BAS scores can be readily obtained. As you might have guessed, the six odd-numbered questions assess BIS, and the even-numbered items measure BAS. So, total the number of "yes" items separately for the odd and even-numbered questions. This gives you a

BIS and a BAS score. The higher the score, the greater your sensitivity to control by extrinsic consequences—the BIS total for penalties and the BAS total for rewards.

Interpreting the BIS/BAS Scores

What do your totals for the BIS and BAS items mean? First, norms have not been established for the entire BIS/BAS survey, let alone the selected items given here. Thus, it's impossible to know whether your scores are high or low relatively to a meaningful standard. However, you can get some indication of your relative sensitivity to negative vs. positive consequences.

More than three “yes” responses to the BIS and/or BAS items suggests substantial susceptibility to the type of extrinsic consequence implied. If the difference in your BIS vs. BAS totals is three or more, a differential sensitivity to one type of consequence is indicated. Of course, you might score high on both BIS and BAS items, indicating equivalent motivation to achieve success and avoid failure. This characterizes the *overstriver*, as discussed above.

A low number of “yes” responses for both the BIS and BAS does not necessarily indicate low motivation. As entertained earlier, this could imply a self-directed individual motivated by intrinsic reinforcers and internal behavior management.

Connections to Occupational Safety

How does the BIS/BAS sensitivity distinction relate to the human dynamics of occupational safety? I'm sure you see a number of connections. First, it shows individual diversity along with a critical aspect of behavior management. Some people are more sensitive to punitive than positive consequences and vice versa. Thus, we can't expect everyone to be equally influenced by the same behavior-based contingencies. It's natural for some managers to choose

one type of consequence over another to motivate behavior, and it's instinctive that some workers are more motivated by negative over positive consequences, and vice versa.

What about those who are surprisingly indifferent to both positive and negative consequences? It's possible these individuals simply do not care about safety and/or their job, and should be asked to leave. But it's also possible these folks are internally motivated and don't need external consequences to keep them going. These individuals can actually be insulted and de-motivated by an explicit attempt to control their behavior with extrinsic rewards, which they might perceive as bribes.

In Conclusion

People are uniquely different in many ways, including their sensitivity to extrinsic behavior-based contingencies. This implies a need to find out more about person factors before implementing a policy or intervention process to improve safety-related behavior. The BIS/BAS survey items provided here could stimulate valuable group discussion before designing a behavior management intervention. They also suggest questions to ask individuals who appear disinterested or uninfluenced by certain consequence-based interventions implemented to prevent occupational injuries.

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Please answer “yes” or “no” to each of the following questions:

1. Do you often refrain from doing something because of your fear of being embarrassed?
2. Do you like being the center of attention at a party or a social meeting?
3. Do you, on a regular basis, think you could do more things if it were not for your insecurity or fear?
4. Do you often do things to be praised?
5. Are you easily discouraged in difficult situations?
6. Do you sometimes do things for quick gains?
7. Are you often afraid of new or unexpected situations?
8. Do you like to put competitive ingredients in your activities?
9. Are you often worried by things you said or did?
10. Do you generally give preference to those activities that imply an immediate gain?
11. Whenever possible, do you avoid demonstrating your skills for fear of being embarrassed?
12. Does the possibility of social advancement move you to action, even if this involves not playing fair?