

Personality and Industrial Safety: *The Search for Practical Connections*

Piles of research in psychology show that personality factors influence behavior. In fact, the first involvement of psychology in safety focused on finding the injury-prone personality. This research occurred in the 1950's, and was not very successful, partly because the assessment techniques were not sufficiently reliable nor valid; and because individual differences were overwhelmed by situational factors (like environmental hazards and ineffective, inconvenient, and uncomfortable protective equipment). Plus, safety promotion was dominated by a top-down, enforcement-focused mindset, as reflected by the common corporate slogan – “safety is a condition of employment”.

The Low-Hanging Fruit

These environmental and management-systems strategies did not fail. They tackled the low-hanging fruit and prevented numerous injuries and fatalities as a result. Today, however, the context has changed for many leading-edge companies. With environmental conditions and management systems more safety relevant, appropriate attention to the human dynamics of safety, including personality factors, will reap observable benefits.

Here I want to provide a context for understanding the role of personality in industrial safety and health. This could provide increased awareness and understanding of the diversity of individual differences related to injury prevention, and inform the development of interventions to improve safety-related attitudes and behaviors.

Can Personality Be Changed?

Yes, some personality characteristics can change. But as discussed in my *ISHN* column last month, person states are more changeable than person traits. For example, the four success/failure approaches to safety introduced in my *ISHN* columns last February and March were discussed as person states, which vary according to the environmental context and interpersonal situation. On the other hand, last month I defined high versus low anxiety as a personality trait that influences a person's attitudes and behaviors rather consistently across various situations.

It's noteworthy, however, that these personality variables exist as both traits and states. For example, regardless of the situation, it's likely some people are more inclined to seek success than avoid failure, and vice versa. And, certain circumstances influence the anxiety level or state of a person, regardless of their trait anxiety.

Injury Prone vs. Injury Preventive

When relating personality to safety it's important to distinguish between one's propensity to experience an injury versus one's willingness to participate in an injury-prevention effort. Both of these inclinations or propensities influence an organization's safety record, but one is easier to change than the other. Specifically, injury proneness is determined largely by internal or dispositional factors which are difficult to assess reliably (as discussed above). Hence, injury proneness is more likely a trait than a state.

In contrast, situational factors controlled by organizational and interpersonal variables influence a person's willingness to contribute time and effort toward an organizational process designed to prevent injuries. So here we're talking about a person state which fluctuates according to behavioral context or climate. Thus, it makes more sense to design environmental and behavioral interventions to get more people involved in a safety-improvement campaign than to attempt to change an individual's personal proneness to get injured.

Figure 1 depicts this distinction between propensity for injury and willingness to participate in an injury-prevention effort. The labels given the four categories defined by the 2 x 2 matrix reflect the relative risk of injury to four different personality types. Where would you place yourself?

Injury Prone

		No	Yes
Injury Preventive	No	<i>Externally At-Risk</i>	<i>Unsafe</i>
	Yes	<i>Safe</i>	<i>Internally At-Risk</i>

Figure 1: Four safety identity categories are defined by two extreme injury proneness traits and two injury preventive states.

The safest individuals are those who are not injury prone and do whatever they can to prevent an injury. The most unsafe employees are those who do not take precautionary measures and are injury prone. Appropriate intervention strategies can move an “externally at-risk” individual into the safe category, but it’s unlikely an external technique can be successful in advancing an “internally at-risk” person to the safe classification.

Connections to Personality Factors

Let's consider a few personality characteristics with regard to the classification system of Figure 1. As a personality trait, anxiety probably influences both injury proneness and injury preventiveness, as discussed in my *ISHN* contribution last month. In addition, certain situations can activate an anxiety state and increase the probability of the kind of thinking and behavior that puts people at risk for personal injury. This change in state would presumably affect every participant in that setting and not be considered injury proneness as a unique personality factor. In this case, the at-risk state could be eliminated by alterations of external or situational variables. We call this an injury preventive intervention. An anxiety state could also increase the perceived need for prevention and motivate intervention participation.

Hence, from a personality or safety-identity perspective, person states are most relevant for injury prevention. They can be changed by an intervention process, and they reflect one's willingness to participate in such a process. In contrast, injury proneness is more relevant to personality traits than states, and is relatively immutable to external intervention.

Some personality factors have greater impact on injury prevention than injury proneness. The four success/failure categories, for example, influence people's motivational state and thus their desire to participate in a prevention effort. Likewise, optimists and people who perceive a high level of personal control (termed "internals") are more likely to be injury preventive than pessimists and "externals" (or those with relatively low expectations of personal control).

However, because of their greater expectations of personal control and positive outcomes, internals and optimists, respectively, might take more risks and therefore be relatively injury prone. Thus, these personality factors can influence one's propensity for both preventing and experiencing personal injury, resulting in no net gain for safety.

In Conclusion

This presentation is the fourth in a series of *ISHN* articles that addressed the personality aspects of industrial safety. The key lesson here is the distinction between injury proneness (which is typically considered an internal personality trait difficult to change) and injury preventiveness (which is more likely a state than a trait that is changeable by relevant external intervention).

Two classification systems were reviewed in this series. One defines four person states – success seeker, overstriver, failure avoider, and failure acceptor – which primarily impact one's motivation to participate in an injury-prevention effort. Subsequently, the classic notion of trait anxiety was discussed which presumably affects one's injury proneness. However, anxiety was also discussed as a situational state that can influence a person's awareness to take certain precautions. Thus, anxiety can be a trait or a state, and can influence both injury proneness and injury preventiveness.

Obviously, we have just cracked the surface with regard to the variety of personality characteristics that can impact a person's predisposition for personal injury and for voluntary participation in an injury-prevention program. The role of optimism and personal control were briefly mentioned, but numerous other

person dimensions are relevant including belongingness, self-efficacy, introversion/extroversion, perceptions of invulnerability, conscientiousness, need for approval, impulsivity, and emotional intelligence. And the complexity of this consideration of personality factors multiplies when considering that each of these dimensions can influence injury proneness, injury prevention, or both of these determinants of an organization's safety record.

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Dr. Geller and his partners at Safety Performance Solutions (SPS) help people develop, refine, and implement interventions that prevent workplace injuries. SPS is offering a series of seminars throughout 2004. For more information about these seminars, related books, training programs, video and audiotapes, and customized consulting and training options, please visit safety@safetyperformance.com or call us at 540-951-7233. Also log on to www.spcoach.com to learn about an innovative internet approach to teaching these and other principles and procedures for improving the human dynamics of your workplace.