Introduction

In 2004, psychologist Martin Seligman, Ph.D., gave a TED talk wherein he related a funny, perhaps apocryphal, story where he, as president of the American Psychological Association at the time, was asked to describe the state of psychology in a cable news interview, but was given time for first a one word response, then two words and finally three words.

Dr. Seligman describes psychology three times, respectively stating that the state of psychology is “good”, “not good” and finally “not good enough”. He describes that psychology is “good” primarily because the field has achieved much in terms of the treatment of mental illnesses. However, he notes that this is also the root of psychology being “not good enough” because in the rush to understand and treat people’s ailments, psychology failed to understand and enhance positive traits of humanity (Seligman, 2004).

The analogy is apt for the safety profession in many ways. Professional safety practitioners have much to be proud of. Injuries and illnesses rates have dropped drastically in the last century. By the measure of incident rates, people are far safer today than they have ever been in history. However, by focusing only on the supposed achievements the safety profession may blind safety professionals to the need for improvement.

Indeed, the profession is in a more tenuous position than ever before. The lack of professional licensure, a significant gap between safety science research and safety practice and an exponential growth in technology and complexity within organizations create new challenges that the profession is not prepared to meet at present. Indeed, the safety profession is good, but given its current state and focus, the profession is not good enough.

Good

In the US in the field of occupational safety alone, estimates of fatal injuries in 1913 indicate a fatal injury rate of 61 per 100,000 workers and 37 per 100,000 workers in 1933 (CDC, 1999). Comparing those rates to the most recent data from the US Bureau of Labor Statistics (BLS, 2014) indicates a fatal injury rate in 2012 of 3.4 per 100,000 workers, amounting to a significant decline of more than 200% and 100%, respectively.
It should be noted that looking at fatality rates across such a wide time frame and across various studies is problematic, given potential variation in counting occupational fatal injuries, so these numbers cannot fully be trusted. Even still, the steep decline is convincing evidence that workers in the United States are safer now than they have ever been in history as demonstrated in Figure 1.

![Figure 1 – US Fatal Injury Rates (CDC, 1999; BLS, 2014)](image)

Improvement may also be seen in recent efforts from the International Organization for Standardization (ISO) to adopt an international standard for an occupational safety and health management system (OHSMS) (Toy, 2014). Given the prevalence of other ISO management systems in corporate structures, the potential adoption of an OHSMS speaks to the gravitas occupational safety and health has gained in industry, which the safety profession can certainly take some credit for. Particularly in larger organizations, safety is seen as an important element of corporate branding. Those organizations that are seen as “dangerous” or having a callous outlook toward worker safety (whether the perception is true or not) are often pilloried in the media. This has led many large organizations to adopt OHSMSs and to tie worker safety initiatives to corporate sustainability efforts.

**Looking Deeper**

Despite the perceived improvements, a closer look at each case highlights potential micro-fractures in the success of the safety profession. Indeed, as is often the case with the organizations that safety professionals consult with, the seeds of failure are sown by success.

Although it would be difficult to argue that the reduction in workplace fatalities is not affected by occupational safety, it is also hard to argue that the safety profession is directly responsible for the reduction. Even though the increase in occupational safety as a profession seems to be correlated with the decrease in occupational fatal injuries, safety professionals must remember that whenever data is analyzed, correlation does not mean causation. So although a
correlation between the increase in occupational safety professionals and the decrease in occupational fatal injury is compelling. It does not mean that one caused the other.

A thorough analysis of fatality trends and their causes is beyond the scope of this article, but a taste of the complexity underlying these statistics is hinted by the reduction in rates reported from 1913 to 1933 – from 61 per 100,000 workers to 37 per 100,000 workers, or 39% decrease. It would be hard to argue that the safety profession could take much credit for this decrease given that the profession was only in its infancy at that time. Compare this reduction to a time when the safety profession was in full swing, from 1992 (5.2 per 100,000 workers) to 2012 (3.4 per 100,000 workers), or a 34% decrease (BLS, 2014).

Again, as stated previously, these numbers are problematic, but the authors believe they are suggestive of the current state of affairs. The safety profession has hit an asymptote when it comes to fatal occupational injuries, where the profession’s efforts are yielding diminishing returns. The reasons for this asymptote are complex but, as Dekker (2014) points out, doing the same things that led you to an asymptotic state to break through the asymptote will not work.

Further, although the recognition required to have an ISO OHSMS adopted is a significant boon for the safety profession, the fact that many resources are spent facilitating the creation of an international OHSMS ignores the fact that the effectiveness of OHSMSs in producing reliable safety performance results has not been consistently shown in safety science research (see, for example, Robson et.al., 2007).

Although the adoption of the ISO OHSMS would provide some legitimacy for the safety profession, it also highlights how the profession often operates separate from research, choosing instead to rely on folk theories when recommending interventions to organizations. This is not to say that OHSMSs are not necessarily viable interventions. Rather, spending significant resources as a profession on interventions that have no clear evidence of their effectiveness outside of anecdotal evidence seems presumptuous and highlights the extreme gap between research and practice within the safety profession, particularly when it comes to social science and organizational management.

Not Good Enough

When searching for the underlying factors influencing the current state of affairs within the occupational safety profession, one must start at the beginning: How does one get into the profession? When we look at this area, we see that our profession is broken and considerable work needs to be done.

Currently, the only standard of entry is whatever the party hiring the professional deems appropriate. If an employer is knowledgeable of what makes a good safety professional this might include education, experience and credentialing. If the employer is not knowledgeable, this could be as simple as “safety by experience,” where the last person who got hurt on the job becomes the safety professional for the organization (Board of Certified Safety Professionals, 2014).

Imagine a world in which other established professions operated in this manner. What if society allowed someone who injured him/herself on the job or became ill as a result of poor
health habits to be a doctor, since this person should know something about health (after all, she/he has been maintaining personal health all along)? What if society allowed someone who broke the law to be a lawyer? These examples are absurd, because both medicine and law are complex fields requiring significant education and experience to practice successfully. Both fields also drastically impact the well being of people.

Is the safety profession really any different? There should be no question that the safety profession has both direct and indirect effects on the well-being of people (indeed, if it does not then one must question the purpose of the profession at all). The safety professional must also deal with extremely complex issues, ranging from understanding and influencing complicated organizational structures, cultures and sub-cultures, and laws and regulations. Further, safety professionals are also expected to have a minimum level of understanding of features such as engineering, biomechanics, forensics, systems theory, social science, chemistry, and physics. Thrusting practitioners into this complex role without sufficient education, experience, and credentialing is setting those practitioners up to fail. Unfortunately, it is often not the professionals or practitioners that feel the consequences of the failure, but the employees who we are ethically responsible for.

A framework where an employer determines the credentials required for a safety professional creates an environment in which the intricacies and standards of the profession are dictated by, to use an economic term, the market. Certainly the market should affect the profession, but in the current environment the safety professional has almost no agency. Those who have a vested interest in paying the least amount feasible determine the credentials of the safety professionals. What causes a safety professional to cost more? Higher education and credentialing. Therefore the market has no incentive to push for a more qualified safety professional, outside of abstract incentives.

This, of course, assumes that the safety profession provides no value to the organization, which any safety professional would argue is just not true. However, even the way the value proposition for safety in an organization is suggested may create an environment of risk taking, rather than risk aversion. Research into risky decision-making suggests that when presented with a choice between a guaranteed small loss or a probability of a larger loss, people tend to choose the probability of the larger loss (Kahneman, 2011). This is exactly the value proposition that most safety professionals give to their organizations in the current practice of safety – invest in accident prevention now (a guaranteed small loss) and avoid the big bad accident later (the probability of a larger loss). Research would suggest that people would tend to take the riskier behavior in this scenario. So even if the safety profession could make a convincing logical argument as to why an organization should invest in a highly qualified safety professional, the way the argument is framed under the current worldview of the safety profession may encourage undesired outcomes.

The Compliance Heuristic

Two features of the safety profession – particularly in the US – highlight this feature of the safety profession - the intense focus on regulatory compliance and the comparative lack of doctorate programs dedicated to safety.
If an employee without significant education, credentials and training is hired as a safety professional, how are they to distinguish themselves in a role as complex and abstract as safety? Focus on regulatory compliance. Regulations are tangible and employers are inherently motivated to be compliant. As a result, the safety professional spends time almost exclusively on regulatory compliance. After a time, safety and regulation become synonymous, as regulatory compliance takes an almost heuristic-like status in the mind of the profession, and when asked what the “safe” way to do a particular job is, the individual responds with the regulatory compliant way to do the job because these are one and the same to the individual.

This approach works (by some definition of that word) in most instances, since the employer is happy to simply comply with the regulations. However, the safety professional has no motivation to explore other areas of safety and this creates an environment where progress in safety is dictated by the regulatory agenda. Safety professionals stop thinking for themselves and innovation is stifled as a result.

The safety professional is not at fault in this scenario, but rather at the mercy of the influences and interactions within the systems where they operate. Within industry the safety practice is largely defined by regulatory compliance and this is perpetuated by a lack of entry standards into the profession. If calling oneself a safety professional required a minimum level of credentialing, education and experience, and those were all accompanied with reasonable standards, the average safety professional would at least be aware that a whole world of safety practice exists beyond regulatory compliance. This alone would move the profession forward.

Research to Practice
In a system where the safety professional is rewarded for being less educated, it is not surprising that there is a significant deficit in doctorate programs in safety (Janicak, 2006). Even the authors were forced to look into alternative areas to pursue doctoral education in safety science, one in a separate field and one outside the United States. The issue is one of supply and demand. Many safety professionals lack formal education or degrees common in other professions. Safety professionals without education beyond the baccalaureate level are not usually trained to be consumers of safety science research. This leads to a lack of demand for safety science research (after all, why does one need research when regulations point to what must be done?). This gap in demand for research is not lost on the safety science community. One researcher recently remarked “I am struck by the lack of training and education within the field, we have academics developing more advanced and complex models but on the other side safety professionals are picked ‘off the street’ with limited formal training” (Le-Coze, Pettersen, & Reiman, 2014, p3).

Without a demand for safety science research, there is no demand for safety science researchers, and therefore no demand for higher degrees, such as PhDs, in safety. Safety professionals are left with only a handful of options for higher education, and there is a dearth of safety science research originating from within the US. This self-imposed brain drain leads to a widening gap between research and practice, and perpetuates both the focus on regulatory compliance and best-guess interventions. Examples, including the focus on structured safety management systems discussed above, abound in the profession. Many other interventions, particularly those related to human behavior and organizational management, are touted in industry, suggesting results that have not been verified by research and have questionable theoretical underpinnings. These vendors do not make such research available because the consumer, the safety professional, does not demand it. Instead safety professionals appear to be
content spending considerable resources on unverified interventions. Again, unfortunately the costs of these decisions are not borne by the profession but by the people we are duty bound to serve, which contributes to the lack of initiative to change the current state.

**The Current Cycle**
All of these issues lead to an unfortunate cycle where safety progress is hampered and in fact may continue to deteriorate, as illustrated by Figure 2. Even if the safety profession is able to withstand the pressures put on by this cycle, it will do so from a handicap and will be ill equipped for a world that is growing increasingly complex.

![Figure 2 – The current cycle of the safety profession.](image)

**A New Way Forward**
Of course, none of this is happening in a vacuum. The world is changing quickly with new technology creating increasingly tightly coupled, complex systems. In the words of Abraham Lincoln, “the dogmas of the quiet past are inadequate to the stormy present. The occasion is piled high with difficulty, and we must rise with the occasion. As our case is new, we must think anew and act anew.” (White, 2009). As a profession, safety professionals must move beyond the old ways of doing things, which may have achieved much, but are not suited to the challenges of the present and future (Dekker, 2014; Hollnagel, 2014).

There are many challenges, but the one that must be tackled soon is the development of a licensing scheme for the safety profession. Such a scheme must include a combination of relevant education, experience, and credentialing, all of which is designed to develop informed consumers
of safety science research, as well as research in other relevant areas, such as social science, systems theory, and the hard sciences. There is wide agreement that a better system for our profession is needed, but when details are discussed, such as specific education, experience, and credentialing significant disagreement exists.

The profession must also develop a standard body of knowledge that is shared within the safety profession. This body of knowledge development will be no small task, as it will require agreement across a fractured profession. However, such a body is important as it defines “what we know so far”, which in turn should inform safety practice by creating a minimum curriculum safety professionals must achieve to be successful within the profession. Currently, college and universities across the country have a range of programs that lead to the awarding of a bachelor or masters degree in occupational safety and health and yet there is no standard curriculum that is used. In many cases there is not even standard definitions used for terms such as safety or risk. In other cases, outdated theories and interventions are still taught to students as if they have relevance. In other professions, degree programs teach from that standard body of knowledge. Consider medicine where a physician will take four years of medical school that will teach them the core body of knowledge to practice medicine. It does not matter if the physician will go on to be a psychiatrist or an obstetrician, they will learn standard tenants important in their profession.

Education of safety professionals must include key areas that are not normally associated with the safety professional’s practice, although they arguably should be. For example, safety professionals should be taught to be informed consumers of scientific research. This includes understanding basic theory regarding experimental design, reliability and validity, basic statistical methods, and how to draw conclusions from research. Further, safety professional instruction must have a heavy emphasis on the soft sciences, such as basic sociology, anthropology, leadership and organizational management, and essential problem solving skills. These skills will help safety professionals not only help their organizations manage safety, but become safety leaders within the organization.

It must be said as well that it is crucial that any effort to make the safety profession more robust must also be coupled with an initiative to inform business leaders of the benefit of qualified safety professionals within organizations. Efforts along these lines have already begun (e.g. INSHPO, 2014), but more research is needed to demonstrate the value a safety professional can bring to an organization. Without a multi-pronged strategy, any efforts are unlikely to achieve significant success, as noted above. Business professionals must be engaged, but the way the value proposition for the safety professional is framed must be changed to one more consistent with newer research into safety management (Dekker, 2014; Hollnagel, 2014). For example, Hollnagel (2014) suggests that safety professionals should change the conversation in safety from only avoiding accidents within organizations to how safety can facilitate the achievement of organizational success. This flips the value proposition on its head, from a lose-lose to a win-win, which should lead to more positive outcomes.

**Conclusion**

Indeed the safety profession has accomplished a lot, but given that the profession may not be able to take credit for much of the gain and given the challenges the profession faces in terms of a rapidly increasingly complex world, the profession is clearly not good enough. Work must begin
to break the pattern that the safety profession finds itself in, which is illustrated in figure 2. Many professional safety organizations, such as the American Society of Safety Engineers (ASSE) and the International Network of Safety and Health Practitioner Organizations (INSHPO), are already working on such a scheme to break this cycle, such as a body of knowledge and constructing a value proposition for the safety profession. However, the average safety professional must not sit passively by while others determine the future of their profession. Each safety professional is strongly encouraged to get involved by contacting bodies such as ASSE, INSHPO, Board of Certified Safety Professionals (BCSP) and others to offer their opinions on what a licensing scheme for the safety profession should look like (or, in some cases, what it should not look like). Change happens when people start talking and change is needed within the safety profession. With an array of opinions perhaps a rigorous, but accessible licensing scheme for the profession may be achievable, and the profession just might take another step towards being “good enough.”

**References**


INSHPO. (2014). *The Value Proposition for the Occupational Safety and Health Professional*. Borys, D.


