

## **We Should Sell More Safety than Lottery Tickets**

Many people get excited about statewide lotteries. They travel many miles and wait in long lines to purchase a lottery ticket for their “lucky numbers.” Some even organize into teams with the commitment to share individual winnings with group members. And the higher the financial payoff for winning a lottery, the greater the individual and team effort to purchase lottery tickets. In fact, I was inspired to write this article by the record-level purchase of lottery tickets this past spring for a seven-state combined lottery with a jackpot of \$363 million – the largest in U.S. history.

All of this reminds me of my good-old graduate school days when I systematically compared people’s decision making in various situations with mathematical models. In other words, I compared people’s subjective choices with objective or mathematically correct decisions. My aim was to discover discrepancies between real (humanly subjective) and ideal (mathematically objective) decision making, and then study ways to reduce these discrepancies -- which reflect destructive bias in individual and group decision making.

The lottery situation provides for the simplest comparison of subjective and objective decision making. Specifically, the objective monetary value of a lottery ticket is a function of the probability of winning the lottery and the amount of money the gambler could win. So if the probability of winning \$1000 is one in one hundred, the expected value of the bet is \$10 ( $1/100 \times \$1000 = \$10$ ). Would you pay \$10 for a lottery ticket that gave you a one in one hundred chance of winning \$1000?

Many people would not bother with such a gamble, because the payoff is not high enough. They would more likely purchase a \$10 lottery ticket in a drawing with a

prize of \$1 million and a probability of one in 100,000 of winning. The expected value or fair price for a lottery ticket in this situation is also \$10 ( $1/100,000 \times \$1,000,000 = \$10$ ).

People are more influenced by the value of the lottery prize than the probability of winning. As a result, many people spend much time and effort to purchase more than \$10 in lottery tickets for a \$363 million lottery, when the probability a person will have a heart attack while waiting in line to purchase a ticket is greater than his or her probability of winning the lottery jackpot.

### **Relevance to Safety**

Are you wondering how this dialogue about the mathematical versus the subjective value of a bet can possibly relate to safety? Well, let's compare the rationale behind a person getting involved in a particular safety effort with calculating the value of a gamble. Two factors are relevant: The probability one's participation in a certain process will work to produce results and the value of the results.

Objectively, these factors should have equivalent impact on defining the value of a safety effort and the amount of participation to expect. However, given what we know about decision making, including people's reaction to statewide lotteries, the potential payoff of a safety effort should be more influential than the probability a person's contribution will make a difference.

### **Selling the Payoff**

So how valuable is the potential payoff of a safety effort? Can you give a monetary value to a human life? A disabling injury? A painful OSHA recordable? And consider that we could be talking about multiple numbers of each of these incidents. Is

the potential prevention of great loss equivalent to potentially gaining a large financial payoff?

Consider also that the payoff from an effective safety process has broader consequences than does the payoff from a lottery. When someone else wins the lottery, you don't benefit unless the winner is willing to share some of the loot with you. Do you benefit, however, when someone at your workplace doesn't get hurt? Your indirect rewards of preventing an injury to one of your team members is obvious. But what about the personal gratification that something you did prevented injury to even a total stranger? For most people, that should be a pretty big payoff.

Thus, it seems that if people will travel long distances and stand in long lines to purchase a lottery ticket, they should be willing to dedicate substantial time and energy to contribute to an effective injury prevention effort. Even if the probability is low that their individual effort will make a difference in the outcome.

I'm sure you recognize a problem with this "sell," however. The payoff from a lottery is objective and straightforward, but we can't observe injuries or fatalities that didn't occur from our safety efforts. However, we can examine our safety outcome numbers (especially severity statistics) before and after a particular safety effort and estimate the payoff.

### **Selling the Probabilities**

While the subjective probability of a gamble is less important to people than the potential payoff, it does have impact. In fact, some people never purchase a lottery ticket because they realize the miniscule chance of winning. That's a legitimate excuse for not getting caught up in a lottery-ticket frenzy.

Likewise, some people resist participating in a safety “flavor of the month” program because of their subjective probability that their effort will not make a difference. So the challenge of the safety professional is to convince these resisters that their effort could lead to a big payoff for someone. Maybe the payoff will not come directly to them, but someone in their work culture will benefit.

With this rationale, any process that can increase the occurrence of safe behavior and decrease at-risk behavior should be easy to “sell.” First, it’s obvious that improving safety-related behavior will prevent injury to someone – somewhere, sometime. This is “common sense.” So now the challenge is to convince potential participants that the process (for example, behavior-based coaching, incident analysis, or safety incentives) can improve safety-related behavior.

After persuading people that a particular process can prevent an injury, the rest is easy. Just remind them of people’s willingness to purchase a lottery ticket with a big payoff and a low probability of winning. The probability of an individual getting hurt might be extremely low, but avoiding the pain and suffering from a severe injury or fatality is an extremely high payoff.

Now shift the probability from an individual to a group perspective. What’s the probability that someone in your work culture will get seriously hurt this year? How big a payoff is it to prevent that outcome? (The size of that payoff should justify substantial participation in a process that could make that happen, even if the probability that one individual’s effort will make the critical difference is small.) Surely, if we’re willing to travel many miles and stand in long lines for lottery tickets that are essentially worthless to the millions who purchase them, we should be willing to contribute more effort to a

process that will prevent a fatality (with a probability much greater than winning a state lottery).

### **In Conclusion**

This article used the “\$363 Million Big Game Lotto” which occurred last Spring 2000 to explain the irrationality of human behavior when it comes to gambling. Specifically, people will put up with significant inconvenience and spend substantial amounts of money to purchase lottery tickets that are essentially worthless when considering the probability of winning the big prize. These people act as if the size of the potential payoff is much more important than the probability of actually getting the payoff.

Perhaps we can use this human frailty to sell safety. In other words, the fallacious logic people use when participating in a statewide lottery can be used to encourage their participation in a safety process that could prevent injury or death. Ask potential participants how much money it would be worth for someone in their workplace not to be killed? Then discuss the variety of things they could do to prevent such a tragic outcome. If their logic is consistent with most people’s gambling decisions, the potential payoff from their safety efforts will be more influential in motivating their participation than the probability a particular effort will secure the payoff.

By E. Scott Geller, Ph.D., Professor of psychology, Virginia Tech, and senior partner with Safety Performance Solutions, a leading consulting/training firm that helps organizations customize processes for improving safety-related behaviors and attitudes. For more information, call (540)951-7233; e-mail: [safety@safetyperformance.com](mailto:safety@safetyperformance.com); or visit [www.safetyperformance.com](http://www.safetyperformance.com)