Play with Three Dice, When You Can

They are there, in your hand. You can’t see them, you can’t feel them, but they are there just the same. And, at the start of any human activity, you roll one, two, three, maybe even four or five of them onto the table. They are the dice of life. A one (the snake eye) on all dice represents failure; anything else represents success.

Consider a single step down a stairway. We know it’s a simple roll of the dice whether the foot we’re putting forward skids off the front of the next step, causing us to take a tumble down the stairs. There may only be a 1 in 10,000 chance our foot mishandles the step ahead (a dice with 10,000 sides), but we know the risk is there – it’s only a matter of odds. You can concentrate, you can take it slow – but you cannot eliminate the snake eye. It’s always there, lurking in the shadows.

This past October, a 19-year-old Connecticut college student lost her life when, on a walk back to the dorm after a night of partying, she chose to rest by propping herself up against the garage door of the University of Connecticut’s fire department. A firefighter, responding to a late-night call, hopped in his fire truck, opened the garage door, and pulled out, running over and killing the student. It’s not a rare event – our motor vehicles are killing machines. In fact, each year in the US, we seemingly responsible adults back over 2400 kids, killing 100 of them. It probably hasn’t happened to you, but be sure – it’s only a roll of the dice away.

So here’s how the system looks, if it’s working well. A child just happens to be behind your car – the first dice lands on a one. You fail to see the child in your pre-drive safety walk around – the second dice lands on a one. That fancy back-up camera fails to alert you to the child in harm’s way – the third dice lands on a one. If they all land on the snake eye, you’ve just backed over a child. It is, in a sense, a planned event. After all, each individual dice can roll the snake eye, no matter how many sides that dice may have. In this case, it’s just extremely rare that all three dice would roll the snake eye at the same time. Perfection (zero harm) is not possible, but high reliability is. If the harm is going to be significant, such as backing over a child, we should play the game with three dice.

With dice, we get the power of math. If you look around at life’s activities, you’ll see a pretty strong inverse correlation between the number of dice, and the number of catastrophic events. Airplanes designed with triple or quadruple redundancy on flight critical systems. Two pilots up front, with redundant flight navigation computers supplementing the pilots’ ability. And, a requirement that maintenance technicians not perform flight critical tasks alone – the FAA requiring a second set of eyes on all tasks that if performed improperly could endanger life. We designed the safety of flight to be a 2-dice game at a minimum – if not 3, 4, or 5 dice away from harm. As a result, we get a pretty safe activity.
The problem is that life is often played as a one-dice game. Climb that tree in your back yard, and in general, it can take only one slip to fall through the branches to the yard below. Drive on a two-lane road, and it's one moment of distraction that might lead you to cross the centerline into oncoming traffic, or to veer off the road and into a tree. Yet, in no place is the single dice more deadly than that of healthcare, at 440,000 patient lives lost each year. Yes, in a few tightly controlled areas, we've been successful at making sure patients are multiple errors away from harm. If designed properly, the systems to prevent wrong site surgery and wrong drug benefit from 3 or more dice. Yet, at healthcare's core, such as diagnosis of disease, it's largely a one-dice game. A doctor misdiagnoses your bowel obstruction at your local urgent care facility – perhaps that one miss, that one roll of a snake eye, costs you your life.

It may seem irreverent to speak of life as a game, and you and I as dice. But it's a model that helps us see who we really are. We can make our way through life believing we humans can, with concentration and perseverance, simply not make mistakes. Or, we can progress through life knowing that we are only an unlucky roll of the dice away from making just about any error imaginable. This latter view is the better science, and produces the better results.

Now, three dice is easier said than done. Most drivers, at least here in the US, will admit they don't walk around the back of the car before they get in, even when they fully intend their first movement to be in a direction of limited visibility. If the adverse event is too infrequent, we humans find seemingly better things to do with our valuable time. Additionally, backup cameras are still not mandatory (not required for all new cars until 2018). Suddenly, what can be a three-dice system is down to one die, the statistically remote chance of an unseen human being sitting in front of your bumper. It's what happened to the Connecticut student – her choice to sleep leaning against the fire station door was all it took to lose her life.

So if it's highly reliable outcomes you seek, you need not wait for reactive learning to tell you what to fix. Simply count the dice – for every pebble in the pond that can propagate toward catastrophic harm, are you playing with three dice? If you cherish those photos from your recent family reunion, back them up (two dice). If it's your wedding photos, back them up locally, and on the cloud (three dice).

Remember, the number of dice you roll is a pretty good proxy for outcomes you will achieve. For the sake of the lives of those around you, where you can, play the game with three dice. If you can't get to three, shoot for two. It's the least we can do.

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2| http://www.kidsandcars.org/how-kids-get-hurt/backovers/