



SOCIETY OF ACTUARIES

Article from:

Forecasting & Futurism

January 2012 – Issue 4

Actuaries: Do We Know Our Limits?

By Dave Snell

An infinite number of actuaries enter a bar. The first one orders a pint of beer. The next one orders a half pint. The third wants a quarter of a pint; and the fourth is about to order an eighth of a pint when the bartender stops her. “All right, I get it! Collectively, you want two pints of beer. *You actuaries should learn your limits.*”

At a recent meeting of the Boston Actuaries Club, Scott McInturff opened with a variant of that joke. But perhaps there is a more serious lesson here.

The theme of this issue is recognizing (and then extending) our limits. In the last year or two we have talked about the limits of classical actuarial modeling and forecasting techniques. Here, you will read about several ways to supplement your toolset. Nobody is suggesting that you abandon the older tools—just that you recognize their limits, and consider some newer ways to give you a broader perspective.

Ben Wolzenski has written an excellent summary of the Delphi methodology (“Delphi Studies Past, Present and Future”). There are many ways to approach most real-world problems. Why limit ourselves to only one at a time? A Delphi study can be a useful “second opinion” to our sophisticated mathematical models. It can surface alternative ideas that might otherwise be overlooked by the recognized “experts” in a judgmental study. We all have read the story about the blind men and the elephant; and how our immediate or past impressions frame our perspective. Perhaps together, the blind men in a Delphi study could have, through rounds of discussions, assimilated their divergent opinions and discerned that an elephant is a large animal with sides like a wall, legs like a tree trunk, a tail like a rope and a trunk like a hose.

Perhaps, in life, we cannot see all of the attributes or dependencies of our own models. The perspective of a Delphi study can help. In a Delphi study, we gather the opinions of many; and the results seem to benefit more from a variety of opinions than from a single expert. Many actuaries are



recognizing how the wisdom of the collective is often superior to that of a single expert or a small group of experts. In fact, Forecasting and Futurism (F&F) is combining forces with Actuary of the Future (AOF), Entrepreneurial Actuaries (EAS) and the Canadian Institute of Actuaries (CIA), as well as the SOA Risk Management staff partners for a Delphi study on “Future Career Opportunities for Actuaries.” We’ll have more information for you about that later this year.

Brian Grossmiller wrote a review of *Linked: How Everything Is Connected to Everything Else and What It Means for Business, Science, and Everyday Life*, by Albert-László Barabási. In *Linked*, we learn that many of our models may be underestimating the covariance among us—that many of the variables where we assume independence are actually interrelated. Network theory can help us deal with this former limit to our understanding of relationships.

I have added a short summary of deterministic chaos “When Algebra Gets Chaotic.” I show that a very simple popula-

CONTINUED ON PAGE 4

tion growth equation can give unexpected results when you change your starting values just a tiny amount. This equation showed a limit to our ability to exactly predict results that involve any real-world measurements of our starting values. It spawned a whole new branch of science called chaos theory.

I've also given a quick overview of the very successful sessions we co-sponsored with AOF on various aspects of complexity science. It's titled "Standing Room Only!" You said you wanted them; we produced them; and you showed up for them. We have momentum. Let's keep it going.

Frank Grossman addresses our visual limits in an innovative article "Hidden in Plain Sight," which questions "I know what I see" logic with examples of "what you see is not what you think you see." It's an engaging look at changing our perspective—in vision and in thought.

Here in the newsletter we reached a limit of a different type. Scott McInturff is writing a multi-chapter wild romp through the actuarial past, present and future. In "2020 Hindsight," he takes a shocking look at the insurance industry through the eyes of well-traveled 62-year-old actuary and baseball lover, Geraldine Springer. The plot takes twists and turns that are guaranteed to blow your mind. We couldn't fit this in a printed edition (his story is already over 40 pages and growing) so we put in a link to it. <http://dl.dropbox.com/u/52684680/2020%20Hindsight.pdf> Scott plans to make this a serial. Geraldine is not a serial killer, but this is a killer serial. Be sure to check it out.



Dave Snell

I am also proud to include an excellent article from "down under," where a distinguished Australian futurist, Charles Brass, shows an uncanny similarity in the tools needed to study the future—and the past! Everywhere in his article ("Investigating the Future: Lessons from the 'Scene of the

Crime") that I read the phrase "crime scene investigator (CSI)" or the term "futurist," I felt like substituting "actuary" as a synonym. We seem to have the same limits ... and similar ways to stretch them. This article is from the November–December 2011 issue of *The Futurist*—another publication I recommend highly for anyone interested in forecasts, trends and ideas about the future.

Ben Wadsley wrote about our new F&F contest, where we get to test our own forecasting abilities and limits. How well can you predict U.S. unemployment? There is an iPad 2 in store for the winner. Have some fun and potentially get a cool new gadget in the process. I find my iPad 2 is rapidly weaning me away from lugging a heavier laptop around with me ... and the apps are fun, and a lot less expensive than their PC counterparts.

Ben also gives his outgoing chair's message; but he is not leaving us, just rolling to another section. F&F and AOF have become kindred spirits. Both Ben and I are on the AOF council now; and we plan to continue the joint F&F and AOF sponsorship of the many complexity science sessions on which we cooperated so well in 2011.

Our new F&F chair, Donald Krouse, is coming in with a lot of enthusiasm, and bringing solid experience and successes from his recent time with the Investment Section. His incoming message is optimistic and inspirational. We are many; we are connected. Read Donald's plans for the coming year. Decide where you can jump in to help us extend our limits. When we join forces, I'm guessing our limit is more than just two pints. ▼

Dave Snell, ASA, MAAA, is technology evangelist with RGA Reinsurance Company in Chesterfield, Mo. He can be reached at dsnell@rgare.com.