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Hard Core

By Rich Junker



Rich Junker, FSA, CLU, MAAA, is an actuarial consultant at Junker Consulting in Tampa Bay, and can be contacted at richardjunker@tampabay.rr.com

ARE YOU AN ACTUARY LITE OR AN ACTUARY HARD-CORE?

It is all relative, of course, as the non-actuarial community considers every one of us hard-core numbers merchants and grinds. But finer gradations are possible in any stratification of human inclinations.

If you are a senior officer removed from the trench work of manipulating numbers, you might fall at the ‘actuary lite’ end of the continuum. If you are wrestling with implementing Solvency II or pioneering predictive modeling tools and struggling to make it sensible and sellable to senior officers, then you surely fall at the ‘hard-core actuary’ end of the continuum.

Let’s consider two actuarial affinity groups: the Technology Section members likely feel they hold in their ranks a preponderance of hard-core actuaries. Perhaps the Management and Personal Development Section members will grudgingly acknowledge that their ranks house a lesser share of hard-core actuaries.

Each of us to this day feels permanently deserving of **hard-core actuary** status as we recall our tenuous connection to human society while running the interminable gauntlet of actuarial exams. Glory days, to be sure.



Still that was long ago — what does it now mean to be truly a **hard-core actuary**? The question to ponder is “Compared to what?”

Alex Boese has recently written a book about scientists maniacal in their pursuit of scientific truth, *Electrified Sheep: Glass-eating Scientists, Nuking the Moon, and More Bizarre Experiments*.¹ Examples of the extremes of hard-core behavior among scientists in pursuit of knowledge include:

“When the Navy conducted its atomic bomb tests at the Bikini Atoll in 1946, more than 90 people volunteered to man the ships stationed in the target area, so that scientists could gather data about the biological effects of the blasts. Navy researchers admitted that human test subjects would be “more satisfactory than animals,” but they worried about the public-relations aspect of using people, so all were turned down.

There’s also a long history of seemingly rational scientists who were willing to sacrifice their physical comfort, as well as their lives, for the sake of knowledge. Some are remembered as genuine heroes, such as the researchers led by Walter Reed who in 1900 let themselves be bitten by mosquitoes carrying yellow fever, to prove that the insects carried the disease.

Other cases of suffering for science are regarded more as historical curiosities. In 1933, University of Alabama professor Allan Walker Blair induced a female black-widow spider to bite his hand. He allowed its fangs to stay in him for 10 seconds, so that he could get a full dose of venom, and then spent several days writhing in nightmarish pain at the local hospital. The attending physician said he had never seen ‘more abject pain manifested in any other medical or surgical condition.’ A fellow entomologist had conducted the same self-experiment 12 years earlier, but Mr. Blair apparently felt the need to experience the sensation himself.

Then there was the Japanese pediatrician Shimesu Koino, who ate 2,000 eggs of an intestinal roundworm in order to study the life cycle of the organism firsthand. His infection became so severe that he began to cough up the worms from his lungs.

Even mathematics offers an example of physical self-sacrifice, through repetitive stress injury. University of Georgia professor Pope R. Hill flipped a coin 100,000 times to prove that heads and tails would come up an approximately equal number of times. The experiment lasted a year. He fell sick but completed the count, though he had to enlist the aid of an assistant near the end.”

We are advanced practitioners of actuarial science, true? Our life actuary counterparts in Germany commonly have a job title along this line: *LebensVersicherungsMathematiksWissenschaftler*. That reads in English, *Life Insurance Mathematics Scientist*. German actuaries are indeed among the stoutest, the most hard core, of all actuaries.

For example, the first actuarial model office was constructed by **August Zillmer**² (1831-1893), he of Zillmerized reserves fame. In addition to these Augean Labors, he also supervised a mortality study of astonishing depth:

Zillmer was the head of the commission which published German Mortality Table from the Experience of Twenty-three Life Insurance Companies (Deutsche Sterblichkeitstafeln aus den Erfahrungen von dreiundzwanzig LebensVersicherungs Gesellschaften) in Berlin in 1883. The report of the mortality study was unique in that it included: 1) the complete methodology of the study including form letters, questionnaires, data forms, and worksheets. 2) separate mortality for men and women. 3) separate mortality for medically underwritten and nonmedical business. 4) separate mortality for industrial and ordinary insurance. 5) juvenile mortality. 6) select



Elizur Wright

mortality. 7) raw data which allowed users to perform their own graduation and analysis of the mortality. The text of the study is a veritable tome of some 880 pages. At the turn of the century, the basic table in this study (M & F I) was the actuarial basis for about 75% of the medically underwritten, ordinary insurance written by the German companies.

Surely Zillmer was the Steven Jobs for his day, of monomaniacal vision.

We Americans can proudly point to our own nineteenth century all-star actuarial counterpart to Herr Zillmer. **Elizur Wright**³ (1804-1885), the first insurance commissioner of the state of Massachusetts, was hard core in the extreme. In addition to enlisting his children in computing the first reserve factors for regulating life insurance, he also invented a calculation engine to speed his labors:

“...In 1852 he resigned the editorship of the *Chronotype*, and from that time till 1858 he was occupied with life-insurance work, the

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editing of a paper called the Railroad Times, and making a number of mechanical inventions, most important of which was a calculating machine, enough in itself to give a man distinction.

This machine was simply a Gunther rule 30 feet in length wrapped on a cylinder and turned by a crank. Gunther's rule is a measure on which logarithms are represented by spaces, so that by adding and subtracting spaces on this cylinder Mr. Wright could perform the longest sums in multiplication and division in two or three minutes of time. ”

Now that we have contemplated the exertions of our actuarial forbears, and personally resuscitated to mind all our own extremes of effort over our careers, isn't it just too tidy that the *Jobs Rated Almanac* on actuaries reads: “*The actuarial career ranks high for... job security and low stress*”? ●

END NOTES

- ¹ *Wall Street Journal Review: The Pleasures of Suffering for Science* <http://online.wsj.com/article/SB10001424052702303753904577454431281272936.html>
- ² Editor's Note: You can read a biography of August Zillmer at <http://www.washburn.edu/sobu/broach/zillbio.html>. You can also find “August Zillmer, An Actuary With Less Reserve” from the March 1989 issue of *The Actuary* on the SOA website at <http://www.soa.org/library/newsletters/the-actuary/1989/march/act-1989-vol23-iss03-roach-aklnis.aspx>.
- ³ Editor's Note: A tribute to this giant of the actuarial profession appears at <http://pages.stern.nyu.edu/~gsimon/Wright01.pdf>.