Awards and Prizes

Nancy Flournoy Receives the Janet L. Norwood Award for Outstanding Achievement by a Woman in the Statistical Sciences.

Dr. Nancy Flournoy, Professor in the Department of Statistics at the University of Missouri College of Arts and Sciences, is the recipient of the Eleventh Annual Janet L. Norwood Award for Outstanding Achievement by a Woman in the Statistical Sciences. She accepted the award at a ceremony that took place at University of Alabama at Birmingham, in September 2012.

Prof. Nancy Flournoy

Dr. Flournoy received her BS and MS in Biostatistics from UCLA and her PhD from the University of Washington. Spanning four decades, her rich diversification in academic appointments range from Directorships at the Fred Hutchinson Cancer Research Center and NSF's Program in Statistics and Probability, to chairmanships with American University and the University of Missouri (MU).

Having recently stepped down as MU's Chair of Statistics, she is now returning from sabbatical as Professor. Her research interests in theoretical and applied statistics include: clinical trials, adaptive sequential designs, transplantation biology and infectious disease, specifically cytomegalovirus at a key point prior to the AIDS epidemic. Notably, her initial collaborative efforts on transplantation research with the team of Dr. E. D. Thomas led to that worthy receiving the Nobel Prize in Medicine in 1990. Dr. Flournoy is a long-standing member of many societies, including the Bernoulli Society, the Institute of Mathematical Statistics (Fellow, '90 & Council Member, '04-'07); Washington Academy of Sciences (Fellow, '93 & Board of Directors Member, '91- '92); World Academy of Art Science (Fellow, '92); American Statistical Association (Fellow, '92 & Council Chair, '93-'95); American Association for the and Advancement of Science (Fellow, '93 & Statistics Chair, '01-'04).

SPA/Elsevier Travel Awards 2012 for the 8th World Congress in Probability and Statistics and for the Pre-world Congress Meeting of Young Researchers in Probability and Statistics

The 8th World Congress in Probability and Statistics was held in Istanbul from July 9 to 14, 2012, and the Pre-world Congress Meeting of Young Researchers in Probability and Statistics 2012, 6--8 July 2012.

The publishing company Elsevier and the journal Stochastic Processes and Their Applications -- An Official Journal of the Bernoulli Society -- support the conferences with four Elsevier Travel Grants. The amounts 2000 Euros are distributed to the winners depending on actual travel costs.

The grants were awarded to the following young researchers:

• Omar Boukhadra (Université de Constantine, Algeria)
• Jiang Hu (Northeast Normal University, China)
• Xinpeng Li (Shandong University, China, and Universie Paris 1 Panthen-Sorbonne, France)
• Ali Mohammadian Mosammam (University of Zanjan, Iran)

Takashi Kumagai, Kyoto

David's Musings: On suspiciously precise answers to intrinsically imprecise questions.

These are notes for some potential future talk. The talk could be pitched anywhere on the non-technical to technical, or the humorous to serious, spectrum. The point is to encourage the audience think about assumptions and evidence behind assertions they might encounter. Readers should feel free to borrow these examples, or tell me their favorite examples.

A first category, not requiring much discussion, is proverbs and sayings that are plainly not intended to be taken literally. For instance, "a picture is worth a thousand words". But this quickly segues into examples whose seriousness is unclear. Consider casual assertions of an 80-20 rule, e.g. like "80% of the work in any organization is done by 20% of the employees" or "80% of crashes are caused by 20% of bugs". One issue is whether there's any representative data at all to support a particular such generalization.

Another issue is that there are hundreds of possible contexts like the two above, and only a few round number splits (70-30 or 90-10 or 95-5 or .....) so for any prespecified split such as 80-20 one would expect to find many contexts where this approximate split did indeed occur. So, the 80-20 rule may serve as a proverbial expression of the idea ``most things are not distributed equally" but relying on its numerical accuracy or significance is surely misleading. (The relevant Wikipedia entry, *Pareto principle*, strikes me as overly credulous.)

A second category is where the number does have a precise technical meaning, but that meaning isn't well expressed in the usual verbal formulation. It is sometimes said that the age of the solar system is 4,568 million years, implying one can pin down some founding event to within a million years. In this case, the event was the gravitational collapse of a small part of a giant molecular cloud. But the everyday meaning of *solar system* refers to the sun and major planets, whose initial formation occurred slightly later over an estimated period of some tens of millions of years. Within our own discipline, a well-known example is the assertion that "7 shuffles suffice to mix a deck of cards". This originates from a famous 1992 paper (http://projecteuclid.org/euclid.aoap/1177005705) of Bayer-- Diaconis and is a good first example one might discuss in detail in a talk. In brief (i) it is based on a mathematical model for riffle shuffles that seems reasonable; (ii) "7" does have a precise meaning (in terms of the variation distance to the uniform distribution dropping below 1/2); but (iii) the idea of "a well-shuffled deck" is intrinsically imprecise and there is surely no one correct way to quantify it.

Here are more typical examples of what I have in mind. *Dunbar's number* (150) is an asserted "maximum number of people with whom one can maintain stable social relationships" (quoting Wikipedia), often more loosely asserted as the maximum size of a cohesive human social group. And Malcolm Gladwell, as a major point in his best-selling *Outliers*, asserts 10,000 hours as the time that exceptional individuals have needed to spend to master their skill. In both cases, one could spend time in a talk analyzing where these numbers actually come from.

Another example (suggested by Persi Diaconis) is a 1956 George Miller paper *The Magical Number Seven* .... (http://cogprints.org/730/1/miller.html), which has attracted almost 15,000 citations in Psychology. The paper used data and then-novel information theory to argue that, when subjects are presented with one-dimensional sensory stimuli (sweetness; musical pitch; length of lines) and asked to categorize their level, "7" is the maximum number of categories for which individuals are fairly consistent in their categorization. But this author was prudent enough to include ``Plus or Minus Two" in his title.

On the humorous side, the "42" from *The Hitchhiker's Guide* .... and I.G. Good's *46656 Varieties of Bayesians* both make interesting points that it's surely unnecessary for me to explain here.

At the end of the talk, I might take the opportunity to slip in two of my own "suspiciously precise" numbers. In sports matches between equally good teams (initially 50-50 chances) which end with one winner, how much (on average, over matches) of the uncertainty about the outcome is resolved in the first half, and how much in the second half? In an oversimplified but not ridiculous model, one can calculate that the conditional probability of a given team winning, given the events of the first half, is uniform on [0,1]. Then an analysis of variance decomposition says there is a 1/3--2/3 split in the "resolution of uncertainty" between the two halves. Second, in designing an inter-city road network linking *n* cities in a country of area *A*, I assert that the optimum total network length will be about 2 (nA)^{1/2}. Here, the (nA)^{1/2} arises by a scaling argument, whereas the constant *2* is an approximate point where a "law of diminishing returns" becomes apparent, in that adding extra network length would do little to reduce route lengths.

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On an unrelated matter, I was sad to learn that the AMS is discontinuing the monthly printed editions of individual *Mathematical Reviews* sections. I have subscribed to section 60 (Probability) for the last 30 years and enjoyed browsing it each month. The fact that the July 2012 issue covered 322 papers whereas the July 1982 issue covered 138 papers testifies to the growth of the field of Probability (overall growth of *MR* is considerably less). Of course, there is nowadays the daily email from arXiv math.PR, which currently has about 150 new preprints per month. In principle, it may well be more desirable to see a preprint today, rather than a review several years in the future. But in practice we all find dealing with email to be a chore, so the result is that a perceived minor pleasure has been turned into a perceived minor chore. Oh well.

David Aldous, Berkeley

Editor's note: This is the sixth installment of a regular opinion column.