ELECTRONOTES

COINCIDENCE

-by Bernie Hutchins, March 2016

BY CHANCE

Here are three paragraphs I typed up a few years back:

It was Christmas Eve, probably 2001 or 2002, and as had been my then recent habit, I arrived in the afternoon at my father's house in upstate NY to spend the evening and next day. He told me that his plumber, Bill Vallone, had recently been there for some work, and that Bill had had a recent tragedy of losing a young daughter to some illness, and a further sadness that someone had stolen an angelic statue from her grave, apparently for a Christmas decoration (!), and that the incident had received media coverage locally.

That evening, driving east back to my father's house from supper (Denny's 24/7/365) we saw a spectacular "shooting star" arcing north-to-south across the sky. This was so large that one necessarily considers if he has ever seen a brighter one. And it was GREEN. So I guessed it was possibly some copper-bearing piece of space debris. Interesting.

Several days later at home in Ithaca, 80 miles away, I happened to hear the "closing" or "human-interest" item of the CBS national radio news. They mentioned the Vallone family of Livonia NY and the theft of the graveside angel. The item related that the family had seen a bright shooting star on Christmas Eve and took it as a sign that the angel statue would be returned, and it was.

Upon hearing the radio item, it was interesting that it was a third item that glued the first two together. And possibly I was one of very few persons on Earth who (personally) knew of all three events: the tragedy, the meteor, and the radio broadcast.

Now, I had a vague idea what Bill looked like, so must have met him personally at least casually, but knew him as my father's plumber, and friend. He was a good man and skilled tradesman, and no one would have wished him anything but the best.   I guess easily 10% of the local community knew the <u>first</u> story. I heard it more or less by chance. Rare for non-locals like myself.

The shooting star was something else. We were driving east at the right time, and it was a spectacular show, although not likely dramatic enough to expect it to be widely reported, and like all such burn-ups, probably not that high up to be seen more than 50 miles or so, or for much more than a second. A smaller bit of debris, a bit different timing, or a different direction, and we would have missed it. Rare.

 Of course a lot of people (millions?) heard the national radio news, but it was likely, like most human-interest items, little noted and soon forgotten. A few key names got my attention. So I guess that too is a rare event – rare that such a story is personally meaningful.

A coincidence of three events.   Coincidences do happen – all the time.

PROBABLE OR IMPROBABLE

Likely the reader here has a story as good as mine. As Persi Diaconis said, "The really unusual day would be one where nothing unusual happens." The wisdom in the Diaconis remark appeared as an epigram for the book ***The Improbability Principle: Why Coincidences, Miracles, and Rare Events Happen Every Day***, by David J. Hand (Scientific American, 2014).

The book is a good read, easy to follow while at the same time a challenge to comprehend in total. We need to reconcile the conflicting principles as stated by Hand:

Improbability Principle: Extremely Improbable Events are Commonplace

with the more classic:

Borel's Law: Events with Sufficiently Small Probability Never Occur

Sounds as though both can't be true. Well, the probability of winning a lottery is likely very very small. If we said you (specifically <u>YOU</u>) are <u>not</u> going to win the lottery, but somebody will eventually, this is something we all understand. In this winning report, the individual long-odds-against are triumphed-over by an immense number of chances (collectively) to play the game.   In practical human terms we understand <u>our own</u> poor luck, but in mathematical terms, we understand the cultural event that <u>someone</u> usually wins (not anyone we know). This is what Hand calls the "Law of truly large numbers". Simple enough – but not enough to explain everything.

Hand relates another example of truly large numbers by which the winning numbers in a six-number lottery were exactly repeated four days later. Of course, the chance of getting a sequence that is the repeat of a previous winner is no different than the chance of yourself winning your own choice. We know that. Are there really enough lotteries to add up to a truly large number? Apparently. The cited repeat was for a Bulgarian lottery in 2009. In the event that you don't regularly play the Bulgarian lottery, likely you never heard of it, or numerous other lotteries drawn weekly around the world; too numerous to report. So why was this particular pair or drawings reported? Well, that's obvious.

REPORTING BIAS

Probably the most common of the "amazing coincidence" stories relate to reporting bias where something <u>otherwise quite ordinary</u> happens (like you answer the phone) and it is coincident with a special circumstance noted <u>after the fact</u>. Typically like you haven't even thought of someone for many years until a few moments ago when they pop to mind, and then the phone rings. The "bias" is in forgetting the thousands of unremarkable calls which are by all measure unworthy of mention. It is common to tell a remarkable story and then have your listener relate, in turn, something similar or better. Here are two such from my memories.

> (1) A neighbor (Lee) was telling me they had just returned from camping in Maine, 500 miles away. Upon telling him I knew the general area (Greenwood) where he was, I related that my father's family ran a jewelry store in nearby Norway. Lee told me that, yes, they even knew the guy (they knew as "Hutch") who ran it. My uncle of course! Who would have guessed?

> (2) When my grandfather was in his late 90s in Maine, he employed a housekeeper (Ethel) who was herself just 10 years younger. When I first met her (a delightful person she) and told her I worked at Cornell, she replied, "Well Chris Pottle works at Cornell." Now Cornell is a big place, and most people DON'T know one another. But, I was taken aback because not only did I know him but his office was in EE just across and one down from mine. Ethel knew Chris because she helped raise him when he was a child. Back in Ithaca I dropped across the hall and said to Chris "I didn't know you were from Otisfield – Ethel Hurst says hello." It took him has usual nanosecond to figure the whole thing out. "So it's your family who runs the jewelry store in Norway."

In fact, Chris understood probability very well so he was more amused and less astounded than many. These two stories are related to the "six degrees of separation" ideas whereby any two people on Earth can be linked by at most (at least typically) six individuals who know each other in pairs. Sometimes it's far fewer links. Chris could have introduced me to Ethel. He was my link to Ethel before we accidentally met.

CLOSE ENOUGH ?

I'm betting that lottery officials are pretty strict in rejecting claims of being close enough. Perhaps you got just one number wrong and perhaps it was just off by an integer. Likely you will argue in vain that that should be worth something – perhaps half the jackpot seems fair to you! Yet persons hearing of your close miss will perhaps consider it even more remarkable. ANYONE could <u>win</u> the jackpot. It must be much more difficult to just miss it by a number. The story is likely to be widely circulated as, cynically considered, bad news has appeal in such a case. If you didn't win, why should someone else? Hand relates the case of a person choosing exactly the right numbers in the wrong lottery. And I think the poor guy <u>had</u> also entered in the other state, but not with the winning sequence.

FULL CIRCLE – A RAT TRAP

What are the odds that while writing this up (and recommending Hand's book), and wondering how to find a graceful point of departure, that a lesser but still interesting three element story should emerge? Possibly the chance is enhanced by just being aware of (writing about) the issue.

Well last Friday afternoon I was about to go for my daily (weather permitting) 3-mile walk. Checking my email moments before going out, I had a note from my neighbor asking my general advice on "a better mousetrap" in that his rat trap had disappeared. I replied that most likely a grey squirrel (a bit large for a rat trap) had encountered his offering, gotten a surprise, run away with the trap as an ornament, shed the trap, and called his lawyer. Then we hit the trail around the blocks.

Coming back, nearly home, I kind of had an eye out for a trap. What if? About five feet back from the sidewalk, there it was, coming down an embankment, entangled in some shrubs. It really was a nice (expensive) plastic trap, but otherwise looked like a discarded black plastic food container or some such rubbish. Had I <u>not</u> been looking for <u>a trap,</u> I would have missed it.

Continuing up the sidewalk I remarked that I would now need to send a follow-up email giving the location of the trap. But as we neared the location of our near-adjacent driveways (and mailboxes), our neighbor was walking out for the mail, so I walked back down with him to show him the trap location. He works and is rarely home at that time, and it takes only a minute to get his mail, or for us to walk past. Had we not stopped to investigate the wayward trap, the timing would have missed. Everything just clicked.

How convenient it worked out – not by design. But telling this here is reporting bias. Coincidence.