

The paper "Methods of Studying Coincidences" by the mathematicians Persi Diaconis and Frederick Mosteller. (Journal of the American Statistical Association, vol 84, No 408) comes to mind.

The authors describe how the recall of "notable" events and the non-recall of "humdrum" events produce a situation where coincidences are noted with much higher frequency than their expected frequency. The authors also describe "the law of truly Large Number".

Let me quote from their paper:

"The Law of Truly Large numbers. Succintly put tyhe law of truly large numbers states: With a large enough sample, any outrageous thing is likely to happend/ The point is that truly rare events, say events that occur only once in a million are bound to be plentiful in a population of 250 million people. If a particular coincidence occurs to one person in a million each day, then we expect 250 occurences a day and close to 100,000 such occurences a year.

Going from a year to life time and from the population of the world (5 billion at the time of that writing) we can be absolutely sure that we will see incredibly remarkable events. When such events occur, they are often noted and recorded. If they happen to us or someone we knowm it is hard to escape that spooky feeling.

A Double Lottery Winner. To illustrate the point, we review a front page story in the New York Times on a "1 in 17 trillion" long shot speaking of a woman who won the New Jersey lottery twice. The 1 in 17 trillion number is the correct answer to a not very relevant question. If you buy one ticket for exactly two New Jersey state lotteries, this is the chance both would be winners.(The woman actually purchased , multiple tickets.....The important question is ,What is the chance that some person, out of all the millions and millions of people who buy lottery tickets in the United States, hits a lottery twice in a lifetime? We must remember that many people buy multiple tickets on each of many lotteries.

Stephen Samuels of George McCabe of the Department of Statistics at Purdue University arrived at some relevant calculations. They called the event "practically a sure thing," calculating that it is etter than even odds to have a double winnerin seven years somepalce in theUnited States. It is better than 1 in 30 that there is a double winner in a four month period - the time between the winnings of the New Jersey woman.