

**Principles of Statistics**  
**Lesson 7: *Life is a Lottery***  
**by Richard Bellikoff**

1 SFX: SPOOKY ATMOSPHERE: CRACKLING FIRE, HOWLING WINDS, GROWLING CATS, BAYING  
2 WOLVES, CONTINUE UNDER:

3 GYPSY FORTUNE TELLER (*Entranced*): I SEE FOR YOU... AN INTERESTING FUTURE... VEEEEERRRY  
4 INTERESTING....

5 CUSTOMER: WHAT'S THAT SUPPOSED TO MEAN? DOES MY FUTURE LOOK GOOD OR BAD?

6 GYPSY FORTUNE TELLER: I SEE GOOD NEWS... AND I SEE BAD NEWS....

7 CUSTOMER (*Impatient, abrupt*): OKAY, LET'S HAVE THE GOOD NEWS FIRST.

8 GYPSY FORTUNE TELLER: THE GOOD NEWS IS... YOU ARE GOING TO WIN THE STATE LOTTERY --

9 CUSTOMER (*Ecstatic, exuberant*): ALRIGHT!!! YEAH!!!

10 GYPSY FORTUNE TELLER: -- IN FACT... YOU ARE GOING TO WIN THE STATE LOTTERY TWICE! -- (*An*  
11 *afterthought*) JUST LIKE THAT LADY IN NEW JERSEY ONCE DID. SFX: CUSTOMER'S WHOOPING,  
12 GLEEFUL, ALMOST TEARFUL LAUGHTER, CONTINUE UNDER: YOU WILL HAVE MORE MONEY  
13 THAN YOU EVER DREAMED OF--ENOUGH TO LAST YOU FOR THE REST OF YOUR LIFE!

14 CUSTOMER (*Laughter subsiding, exhausted by his outburst*): SO, UH -- (*Deep breath, fortifying himself*)  
15 WHAT'S, UH, THE BAD NEWS?

16 GYPSY FORTUNE TELLER: THE BAD NEWS IS -- TOMORROW... IS THE LAST DAY... OF THE REST OF  
17 YOUR LIFE -- SFX: SHRIEKING CAT. SFX OUT.

18 PROF. DRUCKER: LIFE HAS ALWAYS BEEN A BIT OF A GAMBLE. TODAY, THERE ARE MORE WAYS  
19 THAN EVER BEFORE TO GET RICH QUICK -- OR TO COME TO AN UNTIMELY END. THAT IS,  
20 YOU NEVER KNOW WHEN YOUR NUMBER WILL COME UP -- OR WHEN YOUR NUMBER WILL  
21 BE UP. ALTHOUGH FORTUNE TELLERS AND OTHER OCCULT PRACTITIONERS ARE STILL  
22 POPULAR, THE PERSON USUALLY CALLED UPON TO MAKE PREDICTIONS IN MATTERS OF

1 LIFE AND DEATH IS A STATISTICIAN. THESE PREDICTIONS ARE EXPRESSED IN TERMS OF  
2 PROBABILITIES. THE STATISTICIAN WANTS TO FIND OUT WHAT THE PROBABILITY IS OF A  
3 CERTAIN EVENT -- GOOD, BAD, OR INDIFFERENT -- TAKING PLACE. (*Pause*) BEFORE YOU CAN  
4 EVEN BEGIN TO CALCULATE PROBABILITIES, THERE ARE SEVERAL KEY QUESTIONS YOU  
5 HAVE TO ASK YOURSELF ABOUT WHEN, WHERE, AND HOW THE EVENT YOU'RE STUDYING  
6 WILL TAKE PLACE. IN MANY SITUATIONS, FAILURE TO ASK THE RIGHT QUESTIONS WILL  
7 RESULT IN PROBABILITY FIGURES WHICH MAKE NO SENSE. WE'LL BE EXAMINING SOME OF  
8 THOSE SITUATIONS IN THIS LESSON. WE BEGIN WITH -- WELL, THE GOOD NEWS.

9 SAMUELS (PRERECORDED): I'm looking at California lottery here -- little brochure called, How to Have a Whole Lotto  
10 Fun, L-O-T-T-O.

11 DRUCKER: PROFESSOR STEPHEN SAMUELS, FROM PURDUE UNIVERSITY.

12 SAMUELS (PRERECORDED): And they've got 49 numbers -- or they had 49 in California at the time of this brochure.  
13 And you've got a punched card that you use, and you just punch out whichever 6 numbers you want to play.

14 GYPSY FORTUNE TELLER (*Defiant, sarcastic*): ALRIGHT, PROFESSOR SAMUELS -- WHAT DOES THE  
15 STATISTICIAN'S CRYSTAL BALL SAY ABOUT THE CHANCES OF WINNING THE LOTTERY?

16 SAMUELS (PRERECORDED): Well, (...) it says right here in the brochure that the chance of getting 6 out of 49 is one  
17 in just a little under 14 million.

18 GYPSY FORTUNE TELLER (*Echoing, flabbergasted*): ONE IN 14 MILLION...!

19 CUSTOMER (*Getting angry*): AND YOU'RE TRYING TO TELL ME I'M GOING TO WIN TWICE?

20 SAMUELS (PRERECORDED): Now, (...) the lady in New Jersey, who hit the jackpot twice, was playing the game where  
21 there were a little less than 49 numbers. (...) If you have less than 49 numbers to choose from, then you have a little  
22 bigger chance.

23 CUSTOMER (*Interest piqued*): EXACTLY HOW MUCH DID THIS LADY WIN?

24 GYPSY FORTUNE TELLER: WHAT'S THE DIFFERENCE? YOU CAN'T TAKE IT WITH YOU!

1 SAMUELS (PRERECORDED): She won almost four million dollars. And then four months later, (...) she won again --  
2 (...) some more millions of dollars. And that caused the New York Times to publish an article (...) headed, Odds-  
3 Defying Jersey Woman Hits Lottery Jackpot Second Time. And the article begins, (READING) "Defying odds  
4 in the realm of the preposterous, 1-in-17-trillion, a woman who won 3.9 million dollars in the New Jersey state  
5 lottery last October has hit the jackpot again, and yesterday laid claim to an additional 1.5 million dollar prize."

6 CUSTOMER: ONE-IN-17-TRILLION.... LISTEN, YOU, I WANT MY MONEY BACK!

7 GYPSY FORTUNE TELLER: WHAT FOR? YOU'RE NOT GOING TO HAVE TIME TO SPEND IT!

8 CUSTOMER: I WONDER HOW THEY FIGURED OUT IT WAS ONE-IN-17-TRILLION ANYWAY....

9 SAMUELS (PRERECORDED): Well, (...) the details are not given in the article, but you can figure it out because it tells  
10 you that the first time she won she was up against odds of 1-in-3.2-million -- (...) the first time she won you had  
11 to pick 6 out of the numbers 1 to 39; and the next time they had increased it to 42, so you had to pick 6 out of 42  
12 (...) to win the jackpot. (...) And the second time the odds were up to 1-in-5.2-million. And if you multiply 3.2  
13 million by 5.2 million, you get 17 trillion. So that's undoubtedly the way that number was arrived at. But the  
14 question is, does that number make sense?

15 CUSTOMER: WHY NOT?

16 SAMUELS (PRERECORDED): Well, it answers the wrong question. The question is not, "What are the chances of  
17 buying two lottery tickets and winning with both?" -- which is the question that's answered by the 1-in-17-trillion.  
18 (...) If I go out and buy two tickets tomorrow, say one ticket in one lottery and another ticket in another lottery,  
19 and never buy another ticket in my life, what is the chance that I will win with both of these tickets? That's not a  
20 particularly interesting question.

21 CUSTOMER: THAT'S EASY FOR YOU TO SAY.

22 SAMUELS (PRERECORDED): The question is, "What are the chances of somebody, somewhere, sometime winning the  
23 lottery twice? (...) If we take everybody in the world and all the tickets that they buy, what's the chance that  
24 somebody is going to hit the jackpot twice? (...) Isn't that the question that we really care about? (...) That's an