

## Life is not made of the likely, Part 3

Wendell Wiggins

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Why was it that in spite of all my hard work and efforts to go one place in life, I ended up in another? This is how I think it works.

Suppose you just now woke up this morning. You rotated your legs off the bed and sat there rubbing your eyes. What will you do today?

As you sit there, you are quite likely to do one or a few things today. If it's Thursday, then I'm very likely to wheel the garbage cans to the end of the driveway. Let's say it's 85% likely; I forget every now and then. It's very likely that I'll eat breakfast; say 95% likely. The everyday chores and pleasures of life are rather predictable; but the more important things are not so rigidly fixed.

Let's say that it was 30% likely that I would take the postdoc position at Ohio State; it was 5% likely that I would take a job with Westinghouse building power reactors; and it was 5% likely that I would move to Los Alamos and build bombs. Those were the three most likely events to result from my need to get a job. But those outcomes total only 40% likelihood. Another 60% of the outcomes are made of things I never really imagined happening. One percent here, one tenth of a percent there, hordes of one chance in a million scattered all over. That's the way it is with the crucial events of life. The unlikely outcomes, though individually unlikely, are in total, more likely than the most likely one, two, or three outcomes.

So that's why, "Life is not made of the likely."

It shouldn't surprise us that life turns out this way. The whole universe is made of events that follow this pattern. Consider the air in this room right now. It is made up of a rather incomprehensibly large number of individual gas molecules. No law of physics commands one of them to stay down on the floor while another is ordered up to the ceiling. They are completely independent. Each one moves like a billiard ball until it hits a neighbor or the wall, and then, like the billiard ball, it bounces off and goes its separate way.

Since all the molecules are independent, it is possible that every one of them might bounce so that they all end up in one corner of the room at the same time. They could all fit easily in a quart mayonnaise jar. No physical law forbids it. They don't actually convene a party in the corner because it's just too unlikely that they would all go there at the same time. It's so unlikely, it probably hasn't happened even once since the creation of the universe. You're supposed to pretend this room has been here all along.

But for all the same reasons, the actual position and direction and speed of each molecule taken all together right now is just as unlikely; yet there it went. It actually happened.

You would be wrong to conclude that life is just one big lottery; it's not. The laws of physics have been observed to hold everywhere and for all time. By looking at the stars and galaxies with the best telescopes, we can see events happening almost on the opposite side of the universe. Since it took the light from those events 13 billion years to get across the universe, we are seeing events that happened that long ago. In every case—every case—the same laws of physics are obeyed. A single tiny atom and the most complex living being runs by the same laws; and you run by the same laws. Even the Apostle

Paul recognized it when he said, “Whatsoever a man soweth, that shall he also reap.”

Life offers so many possibilities that we end up most of the time doing one of the unlikely things. We don't ever do the impossible things, the ones forbidden by the physical laws. If I'd not inherited the natural talent for math and the inclination to be what we now call a geek, then the offer of a fellowship at Johns Hopkins would never have happened. If I'd not applied myself to keep the Van de Graff lab running smoothly, then Yung Lee would never have mentioned me to Mike Beer at lunch.

The laws of physics simply define the boundary between what is possible and what is not. Within that boundary lies the almost infinite variety of our experience. The boundary is not fixed. Each event, each time one molecule of air collides with another, it changes the boundary of the possible futures of the universe, and with it, our lives.

The past events and choices in each of our lives define the current boundary of each of our futures. Look ahead, take the time to imagine a nearly unlimited variety of outcomes for your life. Make choices and perform actions that steer the boundary of what's possible for you. You can steer it so that the boundary of possibilities lies more or less in the direction you'd like. Then, you might as well sit back and welcome the fact that “Life is not made of the likely.”