



CH. 7: PATTERNS IN THE STONEMWORK

The eye sees chaos, and the mind imagines order.

The teacher kept a garden, a grove of cypress and cedar with a pond at the center.

“You will build me a garden wall, alternating white stones and black,” the teacher told the student. “It must achieve the randomness and beauty of nature. I want to look at my wall and see a reflection of the cosmos.”

“How am I supposed to do that?” the student asked.

“Before you place each rock, flip a coin,” the teacher said. “If it comes up heads, place a white rock; if tails, place a black rock. That way, the sequence will be truly random, like nature.”

The teacher left, and the student began placing stones. But before long, flipping the coin grew tedious. Couldn’t she just pick a random color herself? The teacher would never know the difference. By the end of the day, she’d ringed half the garden with stones—white, black, black, white—and her fingers were cut and blistered.

The returning teacher glanced briefly at the wall. “The stones do not look random. You didn’t flip the coin.”

“How can you tell?” the student asked.

“The mind is full of false patterns,” the teacher said, “and this is what I see when I look at this wall. I do not see the random beauty of nature. I see the strained grunts and groans of a

pattern-hunting mind.” The teacher shook her head. “Try the other half of the garden tomorrow. And this time, give me true randomness.”

When the student returned to work the following day, she obeyed the teacher’s instructions, and flipped a coin for each of the 500 stones. The teacher came home that evening and nodded. “Better work today.”

“What’s the difference?” the student asked.

“Look at your first day, the false randomness,” the teacher asked. “What is the longest streak of black stones that you lay, uninterrupted by white?”

“Four in a row.”

“Now look at the wall of true randomness.”

The student looked, and found long stretches of stones all the same color. One point had ten blacks in a row. By comparison, the first day of work looked quite regular, in its alternation between white and black.

“The truly random wall is full of streaks,” the student said. “But why is that?”

“Think,” the teacher said. “What is the probability of a streak of ten in a row?”

“About 1 in 500.” The student’s eyes widened. “And I laid 500 stones each day. So you’d *expect* to have a streak of ten somewhere in that sequence.”

“Yes,” the teacher said. “Your mind reads great meaning into streaks, and little meaning into their absence. But in true randomness, streaks are inevitable.”

“What I thought looked random, was actually full of patterns. The pattern was a lack of streaks,” the student said, pointing to the first day’s wall. “And what is actually random appears full of patterns, if you believe that streaks have meaning.”

The teacher nodded. Then they sat together for a while, admiring the clusters of cedar and cypress, and the gentle ripples in the water.

CH. 7: DISCUSSION

This fable echoes Ch. 5, The Wise Monkey. Random processes (like flipping a coin) inevitably produce streaks and clusters that our minds interpret as meaningful patterns.

We struggle with randomness from both sides. As discussed earlier, we read significance into patterns that lack any interesting cause. Moreover, when we try to fake randomness, we

hesitate to include coincidences and long streaks, so we create things that are too conspicuously even and balanced. So, paradoxically, in randomness we see patterns, and in patterns we see randomness.

This idea's applications extend beyond debunking false prognosticators—fortune telling, superstition, mutual funds, and the like. In its extreme version, this idea suggests that when we pour effort into explaining things, we're often wasting our time.

“Amazing—that NBA player just hit 8 three-pointers in a row! What's gotten into him?” Maybe nothing. Based on his career percentage you'd expect him to do that once or twice.

“This company's profits are soaring! What a genius CEO, right?” Well, with enough companies trying different strategies, some are bound to thrive by luck alone—not necessarily because of brilliant foresight.

“This school's test scores are phenomenal! What lessons can we draw?” Perhaps none—if talented teachers were distributed randomly across the country, a few lucky schools would receive a share far bigger than average, and we'd expect their students to excel.

We don't want to overextend this notion. It's not that causal explanations are never valid or valuable. But when you're seeking to explain some anomalous success or failure, it's worth asking—in a completely random world, wouldn't we expect a few outliers? Isn't it possible that this remarkable result comes—at least in part—from blind chance?



CH. 7: QUESTIONS

1. Why do you think it's so hard for humans to generate random numbers or data? Why does everything we do—even when we're *trying* to be random—come out patterned?
2. Conversely: Why is it so hard for humans to accept “It's just random” as an explanation for patterns? Why do we find such non-explanations so unsatisfying?
3. Let's take the basketball example. (Choose a different sport if you prefer—it works out the same.)
 - a. Do you believe there's such a thing as “in the zone,” or “on a cold streak”? In other words, when playing a sport, are there times when you're more than just lucky or unlucky, but actually playing *better* or *worse* than average?
 - b. Let's suppose you answered “yes” to part (a). You think there *are* times when an athlete plays better or worse. (It seems plausible.) If that's the case, then when would you expect a basketball player to do better—right after he's missed his last two shots, or right after he's made his last two shots?
 - c. This gives us a testable prediction. If there's such a thing as “in the zone,” then a basketball player should have a better chance of scoring right after he's *made* two shots than after he's *missed* two shots. Take a guess: Do you think the data confirms this prediction?
4. An interesting case study: In the United States, the highest rates of kidney cancer (per capita in a town) occur in small, rural towns.
 - a. Come up with some plausible explanations for this fact.
 - b. Here's another fact: In the United States, the *lowest* rates of kidney *also* occur in small, rural towns. Try explaining *that*.
 - c. Finally, here's a hint: This is nothing more than randomness. What's going on?