

## The Paradigm Discourses “Surf Beach”

*Philosophy quiz, “Define force.”*  
*Brazen student, “Make me.”*

After a scorching hot week Understanding gave the team the night off and took them to the artificial surf beach at Crest and Valley.

A pump house at the narrow end of the surf pool created waves every 20 seconds. The pool was bordered by a low wall on each side which widened for 50 meters, ending at the ‘beach.’ A long grate-covered drain separated pool from beach which swallowed each now diminished wave. Surfers would catch a wave, ride it to the beach, and then board in hand walk back to repeat the process.

It didn’t take long for surfers to figure out that riding a wave to the center of the beach meant a longer walk back. The result was typically two surfers on each wave, one on the left, and one on the right.

Paradigm rode three waves, the first to the center of the beach, the second to the left edge, and the third, had to admire the symmetry, to the right edge. Then bored, he checked in his surfboard, hunted down a staff member, and after a brief discussion, came back with a walkie-talkie. He stood on the beach, in the center, and watched the waves for several minutes. Each time the *whole* wave reached the *whole* drain, all at once. *Duh*. Every 20 seconds, *all-at-once*. His eyebrows went up, all-at-once was a synonym for *instantaneous*. His smile grew, he took a moment to enjoy the epiphany.

While Paradigm was indulging himself in these reflections, Reason found himself opposite Curiosity. They rode the next wave, he on the left, she on the right, but upon reaching the drain, he quickly jumped off, grabbed his board, and leapt onto the wall. Turning in her direction, he shouted, “Beat you.”

She just shook her head, but soon thereafter, Reason had opportunity to gloat again, first opposite Mathematics, and then Dogma. That settled it, the race was on, first out of the water ‘won.’ Silly, but fun. Now surfers were riding the waves as close to the walls as possible. Tricky.

Paradigm saw an opportunity to combine research with a practical joke. ‘Let’s see, who started this competition, oh yes, Reason of course.’

He brought the walkie-talkie up to his mouth. This was going to be sweet. After a short dialog, mechanical sounds emanated from the pump house and for a minute it failed to produce any waves. Three missing waves. The surfers in both lines fidgeted, unsure whether to wait it out or report a malfunction, but then the next wave appeared, only this time not all at once. It exited from the pump house first on the left side, then extended across to the right side. A nice straight wave, but now at an angle. When it reached the drain at the beach, it was swallowed up from left to right, most definitely not all at once.

Surfers on the left were reaching the beach just ahead of surfers on the right. Reason was winning all his matches. That it was unfair initially went unnoticed.

The race elicited by Reason was entertaining, but Paradigm's primary attention was on the interaction of wave and drain. It was fast, over quickly, the point of closure zipping along the drain much faster than the wave itself moved. Obviously, the gap closed from left to right.

He monitored the two lines of surfers, waiting for Reason to be opposite Curiosity again, then spoke into the walkie-talkie. Once more, mechanical sounds emanated from the pump house; three more missing waves. Now the waves started on the right, where Curiosity caught it. Off she went, and Reason had no hope of catching her. As she stepped onto the wall, she looked in his direction, licked her finger and drew a tick mark in thin air 'logging' a win in some virtual ledger. One point for her.

Though Paradigm was enjoying the tease, he stayed focused on the interaction of wave with drain. The point of closure was just as fast, but now it traveled right to left. The direction was determined by the angle between the beach and the initial wave, the greater the angle the slower the point of closure moved. But it was clear that it would always move much faster than the waves.

As Reason neared the head of the line on the left, Paradigm spoke again into the walkie-talkie. Now the waves emanated left to right, and Reason won the next race, but it wasn't against Curiosity. A few more runs, and Reason was opposite Curiosity again. Paradigm spoke, and the next wave emanated right to left, Curiosity won once more, and fingered another entry in her 'ledger.'

As the evening wore on, Paradigm established a pattern. Reason won every race against everyone except Curiosity. It was driving him nuts.

Understanding was the first to catch on, he abandoned surfing, came over and stood next to Paradigm. "I suppose you are talking to the operator in the pump house."

"Why, whatever gave you that idea, sir." He smiled, grinned actually, a devious grin, ceremoniously 'hiding' the walkie-talkie behind his back.

"You are an evil man."

"No doubt, sir, no doubt. But opportunities are not to be squandered."

Shortly thereafter, the peculiar race stats convinced Mathematics that something was afoot, and he too stopped surfing. He moseyed over to Paradigm and Understanding.

Experiment and Theory noticed next, at the same time, and joined the growing group as well. All five watched, enjoying a guilty pleasure, sharing the mirth, and wondering when the patsies would catch on. Understanding disappeared to return shortly with drinks; a good show deserved good libation.

That left Dogma and Reason on the left, Logic, Proof, and Curiosity on the right.

Reason won every race against Logic and Proof; but lost every race to Curiosity. Eventually Reason rode too close to the wall and wiped out. Curiosity raised two fingers.

That is when he finally noticed Paradigm standing center stage on the beach, half the team behind him, oh, and that he held a walkie-talkie. 'Two plus two makes four – I should have known.'

He trudged over to the group dragging his board behind him. Standing in front of Paradigm, “I suppose I have you to thank for this humiliation?” Paradigm, “My dear Reason, beaten by a girl, again and again, and after such a promising start; whatever are we going to do with you?”

Before Reason could construct a retort to wipe that playful smirk off Paradigm’s face, Understanding handed him a drink, “A flamboyant wipeout, the first of the night. You are an inspiration to us all.” His smile softened the barb.

Reason took the drink, “I suppose, if I’m going to dish it out, and I do excel at that if I do say so myself, then I am obliged to take it like a man. Nicely played, Paradigm.” He raised his drink.

Paradigm, “Call it even, but onto more interesting matters. I want to show you all something. Watch how the wave collapses on the beach when their angle differs.” He provided several examples. “Look how fast the closure point advances, it zips along much, much faster than the wave itself moves.

“We can describe the arrival of each surfer as an event, two isolated events, one spacetime coordinate for each. But the collapse of the wave on the beach, that is a whole set of contiguous events. I think we might have a metaphor for a nonlocal, oh, I don’t know, call it a *happening*.”

With that, the rest of the team arrived, wet and exhausted, but it was Dogma who had the question, “What’d I miss?”