

The Paradigm Discourses

“Red, White and Blue”

Hidden Information

Dogma entered the room, a bit late, and nearly collided with Reason, standing rigidly in place, who, undoubtedly for nefarious reasons, was emulating a statue, one arm raised. “What are you supposed to be?”

“An invariant.”

“A what?”

“An invariant.” Reason gave Dogma an exasperated look, “What doesn’t change while chaos reigns all around, the constant, the quintessence – I am reality.”

“You’re something alright.” Dogma bent to duck around Reason then made a playful jab at his exposed arm pit. That got a reaction. Reason stood down unblocking Dogma’s path.

Dogma took two steps into the living room, then froze. It was a mess of motion, and equipment, and people, and noise. It took a moment to take it all in. There were two straight raised tracks, a long one and a shorter one, both about kitchen counter height. Envelopes were skuttling outward from the center of the tracks like some mad Christmas toy train set, white envelopes on the longer track, red and blue envelopes on the shorter track.

Chaos reigned all around – indeed.

Reason leaned in, “I tried to warn you.”

“Maybe you better walk me through this.”

“Sure thing.” Reason released a measuring tape from his toolbelt, an item Dogma had missed on their...encounter. Handing it over, “You’ll need this, follow me.”

They walked over to the longer track. White envelopes departed the center towards each end, then simply fell off into a pair of baskets. The ‘white’ track was parallel to the long wall of the room.

Reason, “I want you to measure and to count.”

Dogma, carefully observing the situation, finally confirmed the assignment, “You want me to measure the length of the track, the number of envelopes, their spacing, and their rate of production. Correct?”

“Very good, precisely, in fact.”

Dogma set to work, capturing the data in a small table.

Length	Left Envelopes		Right Envelopes		Total	Rate
12 ft	6	1.0 ft	6	1.0 ft	12	1.00/second

Reason double checked the table, nodding to indicate that the captured values were correct. “Now do the same for that track.” He pointed to the shorter one, the track with red and blue

envelopes on it. Dogma noticed that it was at an angle to the first track. He also observed that red envelopes traveled to the left, but farther apart, blue envelopes to the right, but closer together, yet as for the white track envelopes emanated from the middle and likewise fell off the ends into another pair of baskets.

He took his measurements and produced a second table.

Length	Red Envelopes		Blue Envelopes		Total	Rate
9.6 ft	2.4	2.0 ft	9.6	0.5 ft	12	0.80/second

Dogma showed the second table to Reason who again nodded to confirm its correctness. Muttering to himself, Dogma reviewed it column by column, “Track length different, color of envelopes different, spacing different, number of red envelopes different, number of blue envelopes different, rate of production different – wait, that’s interesting, there are still 12 envelopes on the track at all times. *Ahh*, the invariant!”

Dogma looked at Reason, “Smartass, very interesting.” Both were smiling.

Reason, “Have you missed anything?”

“Probably. Hey, Mathematics, can I borrow you?” Mathematics made his way over, but for no discernable reason, Paradigm tagged along. *Lovely*. “Yes?”

Dogma showed him the two tables, “Reason thinks I’ve missed something. You?” Mathematics glanced at the two tables, then, “I see a pattern that should be noted; the rate of colored envelopes is reduced by the same ratio as the track is shorter.”

“By gamma, so it is, they are both divided by 1.25.”

Paradigm, intruding, “Very detailed, Dogma. As usual, you saw everything, on both tracks, in both directions, and recorded it all meticulously.”

Dogma, “But...?”

“But why? Why this pattern? Why only one invariant? Why any at all?”

Everyone looked at someone else, but in silent contemplation.

Paradigm broke the awkwardness, “Nonetheless, your table is missing one entry.”

Dogma noticed Curiosity looking at him, eyebrow raised. With grim determinism he recalled his pledge to himself, ‘No stonewalling.’ He swallowed, “Please, by all means, enlighten us.”

“Is the key, perhaps, the relationship between the angle of the track and all the other differences? Let’s find out.” He scooped up a control box connected by a thick cable to the center of the shorter track, “Stand clear,” he pushed a button. The shorter track started to rotate, to be more parallel to the white track. As it rotated, it got longer, the color of the envelopes began to fade, the now reddish envelopes getting closer together, and the now bluish ones getting farther apart. The rate of envelope production increased as well, but two things remained unchanged; the speed with which the envelopes moved and the total; 1 foot per second, 12 envelopes.

Eventually, the ‘colored’ track was parallel to the ‘white’ track, now the same length but with white envelopes, indeed it was indistinguishable from it, but Paradigm didn’t halt the rotation, he let it continue. As the relative angle went negative, the track returned to shrinking, the rate of envelope production decreased, and the envelopes regained their bluish and reddish tints, but now blue envelopes went left and red went right, opposite from earlier. When it achieved the same angle as before, but in the opposite direction, Paradigm halted the demonstration. Still 12 envelopes, but now like this.

Length	Blue Envelopes		Red Envelopes		Total	Rate
9.6 ft	9.6	0.5 ft	2.4	2.0 ft	12	0.80/second

“The trick, as usual, is determining what to ignore. In this case, ignore everything except the total number of envelopes; that’s where we’ll find the breakthrough.”

Dogma, under his breath, “Paradigm and his damn ‘ignoring’ conjecture,” but Curiosity overheard him, “Oh, Dogma, I’ll bet that is one conjecture you’d love to...”

“Don’t say it.”