

Duck or Rabbit? A Kuhnian Parable

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The following fiction is a reflection on Thomas Kuhn's comparison between scientific revolutions and gestalt shifts, such as the famous duck-rabbit, below:



Alice Grant loved science. So, after finishing her bachelor's, she had no thought of doing anything but grad school. Her favourite area of study was Duck. She studied a little Duck as an undergrad, taking a couple of courses, and in grad school she quickly made it her main focus. She knew right from the start that her doctoral thesis would be on Duck somehow.

When the time came to pick a thesis topic, however, Alice ran into trouble. She had always been fascinated by the 'posterior cranial indentation', or PCI, that small hole at the back of Duck's head. People couldn't understand her interest in it, dismissing it as an

accident of nature, a pointless detail of no interest. They didn't get her curiosity in it. So it should have been no surprise to Alice when her supervisor, Dr. Gable, ruthlessly shot down her proposed topic. "That's a silly choice for a promising young researcher," he said. "You can't build a successful career on studying the PCI. You won't get funding, there aren't any good journals publishing on the PCI, it's a dead topic."

Reluctantly, therefore, she decided to work on the bill instead. The bill was a hot area, with an annual international conference, a couple of bill journals, and good prospects for postdoctoral work.

Her investigations into bill went badly however. Dr. Gable had steered her into devising more accurate techniques for measuring the hardness of the bill surface – existing techniques had proved to be unreliable, giving rather wayward results. But Alice's new technique, though it should have worked, she thought, gave results that couldn't be right. According to her data, the bill was extremely soft, far too soft to grip anything firmly. Dr. Gable was disappointed in her, and seemed close to suggesting that maybe she wasn't cut out to be a scientist after all.

Alice refused to give up, however. She was sure that her method was sound, certain that the bill was indeed far softer than anyone realised. But how could the Duck bill be that soft? She started to think wild thoughts. Perhaps the bill wasn't a bill at all?

Years later, Alice struggled to remember the first moment when she came up with the (now famous) rabbit hypothesis. As an undergraduate she had taken a religion class, and had been especially taken with Leporidian thought (Leporidians, as you know, believe that the universe was created by the Supreme Rabbit.) While she laughed at this idea as much as anyone else, secretly she found something about the idea strangely compelling. So it was perhaps natural enough that, after discovering the softness of the bill, her thoughts would drift back to rabbits. If the

Duck were actually the Rabbit, then what would the bill be? Why ears, of course! Then their softness would be a matter of course.

Alice's rabbit hypothesis, once it first formed in her mind, quickly took hold of her. It seemed to gain a life of its own, to the point that she was obsessed with following through with it. But obviously she couldn't share her idea with Prof. Gable. So she announced to her supervisor that since the hardness measurements were obviously not working, she would instead try to examine the fine structure of the bill surface. (This would enable her to test the ear idea.) But the suggestion was not viewed favourably.

"That's a rather odd project. Just what do you expect to find there?" he demanded.

"Oh, I don't know ... I just thought I'd look and see."

"That's not how science works, young lady. We only have the time and money to look in places where we expect to find something interesting. We already know that the bill is smooth and hard, since it's a bill. There's no glory (or research funding) in simply confirming what we already know."

But somehow she convinced him to let her try, for just a few weeks. Her results, of course, were astonishing. Her protein analysis found clear evidence of hair, or at least hair-like structures. Dr. Gable was exasperated. Hair on Duck's bill, for God's sake! But after reviewing the data and her methodology, he reluctantly allowed her to publish her results, in the prestigious *American Journal of Bill*. The paper, authored by Gable and Grant (in that order) "Anomalous Filamentous Structures in Bill Surface", generated some comment but was forgotten after a few weeks.

Secretly, however, Alice was doing some "extra curricular" reading. She found a couple of papers by a Swedish team on the anterior cranial indentation. (For some reason, Sweden seemed to be the one place where you could study PCI.) They had found

oddities there as well, isolating a kind of enamel from samples drawn from the PCI. The team was unable to find a satisfactory explanation. Alice couldn't believe what she was reading – she became breathless with excitement.

“There are teeth there!” she yelled out loud. “It’s a freakin’ *mouth*, that’s what it is!”

Some twenty years after those heady days, Alice reflected on how the world had changed. Nobody studied Duck anymore, it was all Rabbit now. The battle had not been easy, it had taken many years, but one by one Duck researchers had gone over to Rabbit. In some departments the struggle had been rather bitter, with Duckists trying to oust their Rabbitist colleagues, and vice versa. But by this time the only Duckists left were irrelevant dead wood just a few years from retirement. It was impossible now to get a Ph.D. working on Duck.

Alice marvelled at how her grad students were in most cases simply unable to see the Rabbit ears as anything but ears, and the mouth as anything but a mouth. The old terms, like ‘PCI’, seemed very quaint now, from bygone age. Occasionally, for fun, she would assign a Duck studies reading to one of her classes, and they had trouble making any sense of it at all. “You have to get into their heads,” she would tell them, “try to see the Rabbit as they saw it, as a duck”. A few would get it.