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A WARNING FROM A T-REX

Marcus and Grand Alf followed a robot guide through the great hall of the museum. They walked under a magnificently complete skeleton of a Diplodocus, its bones blackened with age, its fleshless face a frozen grin, its tail tapering to a string of vertebrae as thin and dangerous as a whip.

They turned right and passed through a series of connected galleries displaying all manner of creatures in glass cases. Some specimens were no more than airy skeletons while others wore well brushed fur. Some were small enough to fit into the palm of your hand, others were several stories high. Their journey took them past evidence of steady constructive, purposeful evolution and sudden destructive, indiscriminate mass extinction. The splendour of the species was complimented by the building itself, a purpose built Natural History Museum with acres of displays, cathedral like ceilings and bizarre stone sculptures carved into every pillar and archway.

The robot led them out of the public galleries through an inconspicuous door and along a series of narrow corridors that opened out into a work space. In the corner was a large office. “Dr Ramos is just completing a TV interview,” said the robot. “Please wait in here.”

The office was like a discovery room in the museum. Several large ‘living-fossil’ cycads grew in pots, their spiny stems and needle-like fronds suggesting that those who had once grazed on this foliage must have been made of stern stuff. Large cardboard boxes were stacked on the shelves with enigmatic labels such as ‘moles’ and ‘algae from ice planets’. Skulls and jawbones were spread out on a table in ascending order of size in what looked like a cataloguing exercise. Bigger, more impressive bones with names like ‘Baryonyx Bulkeri’ were mounted on pedestals and displayed in recessed alcoves.

Grand Alf was particularly excited by one of the smaller items and picked it up, taking it to the window for a closer examination. He delicately turned the fragile jaw bone in his long fingers, making little appreciative noises as he gently stroked the smooth surface of the teeth. Bathed in the morning light, totally absorbed by some fragment of a living creature Grand Alf looked particularly professorial. Even the large bulges in his pockets betraying the tins of food purloined from Pepolonius somehow added to the image.

The door swung open and in walked Dr Ramos. Even though he was wearing a suit he looked like he would be more comfortable on an archaeological dig in long boots, a rugged outdoor coat and a wide brimmed hat. His long hair was dense enough to shield his neck from the beating sun and he had the look of someone who had accumulated the knowledge of millennia. “Say, Grand Alf, you be sure not to drop that, it’s the only one ever found,” he cautioned in a slow, deliberate tone and an accent that was a composite from several planets.

“I’m Dr Ramos,” he said extending his hand to Marcus, “I’m sorry to have kept you waiting.”

After several minutes of small talk, some of which centred on

persuading Grand Alf to stop touching the items in the office, the topic turned to the reason for their visit.

Grand Alf provided the explanation, “We’re searching for the fundamental truths about how businesses work. The world of business has some similarities to a living system and we suspect it might obey some of the same rules governing the natural world. In particular, we were wondering if there are any parallels between what protects a species from extinction and what might save an organisation from failure.”

Dr Ramos was on his feet, “An intriguing idea,” he exclaimed. “Instead of telling you why don’t I show you?” Marcus suspected Dr Ramos was just as keen to keep Grand Alf’s inquisitive fingers away from the treasures in his office as he was to show them the delights of the museum, but he was not about to protest getting a personal tour of some of the greatest exhibits in the universe.

They followed Dr Ramos past long, narrow rooms filled with row upon row of glass jars containing wizened specimens blanched to a uniform formaldehyde pallor. They walked quietly around groups of eager university students chipping plaster away from large blocks of fossilised remains and they encountered school groups who gasped and shrieked as they handled hairy, slimy specimens from the collection.

“Are you familiar with the distant planet Earth, the home of a culturally and technologically underdeveloped population of humans?” tested Dr Ramos. Marcus confirmed he was. “Then I will use Earth examples to illustrate my point because it has a wonderfully rich and interesting variety of life forms,” said Dr Ramos.

They emerged next to the entrance of the museum’s most popular public galleries - The Dinosaur Halls - guarded by an ancient skeleton

of a two story high Camarasaurus. Its sturdy ribs reminded Marcus of the frame of a wrecked wooden boat he had once seen washed up by a high tide. Lying there on the beach, the boat's remains had whispered of adventures once enjoyed when it was whole. In a similar way the bony architecture of this once masterful animal was an echo of its fleshy existence. Solid proof of a living, possibly even loving, animal that perished along with all others of its kind.

Past this immobile sentry they came upon another solid, heavy boned dinosaur with battering-ram horns capable of inflicting a fatal wound on the mightiest of attackers. Dr Ramos turned right and led them up a flight of stairs onto a suspended walkway providing an aerial view of the smaller dinosaurs below and an eye-to-eye encounter with the larger specimens.

Anchored to this walkway by a spider's web of cords were fine boned, delicate skeletons. These were the small fry of the dinosaur world. The walkway bounced slightly with every step, transferring vibrations through these cords and causing the little skeletons to shudder and dance as if some memory of life still pulsed in their remains.

Marcus looked down onto the exhibition floor. Complete dinosaur skeletons from different eras were arranged in various lifelike poses. It was a strange and magnificent sight. He had a thousand questions but Dr Ramos was bounding ahead, "Follow me," he said. "Let's have a look at one of these in the flesh."

They heard it before they saw it. The sounds grew louder as they descended a ramp and turned the corner into a re-creation of a Jurassic swamp. Roaring like a foghorn, a full sized T-Rex stamped around in its boggy enclosure. This was the big brother of the hologram they had seen at Big Boot Workshops but unlike its ethereal cousin

it was a solid animatronic version, bringing the extra dimension of weight and mass. Visitors stood several deep in quiet amazement at the sight of a beast that once ruled Earth. Although it was likely to be safe, no one ventured to the edge of the barrier.

"We used to have a hologram version but we had problems with the containment field. It kept on wandering out of the exhibit and terrorising visitors in the coffee shop," explained Dr Ramos leaning over the railings and waving his hand to attract the attention of the Rex. "Something to do with the building design and the fact the holograms are really built to roam in big spaces." The T-Rex came over and stretched forward so Dr Ramos could reach out and gently stroke its nose, like a horse at a farmyard fence. Dr Ramos gave it an affectionate pat and with a gesture sent it back to its pacing and bellowing routine. "We built that little trick into its programme, it always gets a good audience reaction when we do our 'keeper talks' in the school holidays," he explained.

Certainly Dr Ramos' interaction had an effect on the visitors who now moved forward and were whispering to each other. "I told you it was real," Marcus heard a young Podlet scold its even younger brother.

Dr Ramos took them a few steps away from the main walkway but still in sight of the T-Rex. "This species became extinct when an asteroid impact and some devastating volcanic eruptions dramatically changed the climate of Earth. Had these catastrophic events never occurred it still wouldn't have survived."

Marcus looked puzzled, "I thought it was the top of the food tree."

"More like out on a thin limb of the upper branches," Dr Ramos chuckled, pleased with the image. "This animal, unfortunately, has

extinction written all over it." Dr Ramos settled into an explanation, "Don't forget extinctions happen all the time. Circumstances are always changing and creatures that fail to adapt don't survive. It's this constant background extinction that keeps our gene pools fresh."

Dr Ramos pointed at the T-Rex, "This wonderful creature was a perfect candidate for this kind of extinction. Very big, very specialised, very tuned into its environment. The Rex had to eat a lot of specific prey in sizable quantities so it needed a particular kind of habitat in which to hunt. Any one of a dozen minor perturbations could disturb the fine balance required to sustain its population."

"Nothing to do with those little arms then?" asked Marcus, still fascinated by the pacing and snorting model in front of them.

"They wouldn't have helped but they weren't fatally significant. No, the story of the T-Rex is told over and over again. Take Earth's sabre toothed tiger, an elegant cat, brilliantly specialised to bring down large, heavy, ponderous prey several times its own weight. Their hallmark fangs were precisely placed to slice through the jugular vein and rapidly terminate a specific kind of big beast that couldn't be held down for too long. Like the T-Rex, when the bigger prey was wiped out by climate change the sabre toothed tiger was too slow, too awkward and had the wrong dentition to catch and kill smaller deer."

Marcus thought about this, "The same set of circumstances was at work. Does that mean the forces driving big animals to extinction follow some kind of universal law, and could that law also apply to organisations?"

Marcus pulled his attention away from the exhibit and looked at Grand Alf for some reaction to determine if he was on the right track. It was, after all, Grand Alf's suggestion they visit the museum to explore

exactly this point. Grand Alf, as it happened, was swaying his head to the rhythm of the Rex's tail, completely intrigued by the way the model moved around its enclosure. He did not appear to be listening at all.

"Based on what we've discussed, you tell me," Dr Ramos challenged.

Marcus spoke slowly, forming his thoughts, "The T-Rex example suggests that over specialisation and over dependency on, say, a narrow customer base, limited product lines or a rare form of raw material is a symptom of vulnerability for businesses." Marcus paused and added, "Another warning sign is an inability to readily adapt to unexpected changes, whether for structural or cultural reasons."

Dr Ramos nodded and Marcus continued, "Yet another weakness indicator is any business that has to 'feed often', which means it banks too little of its turnover and it can't stay afloat for long if income slows."

Marcus thought about some household names that had vanished in the past few years, testing this set of criteria against real cases. The theory seemed to hold true. "The same forces that ring an alarm bell for species' extinction do apply to businesses," he said excitedly. "It would be possible to translate what we've just discussed into the business equivalent to use as a tool for organisational extinction proofing."

It was Dr Ramos' turn to think about this. After a long pause, he said slowly, "You just may have something there. My new friend, I think you do."

"If the characteristics heralding destruction are the same, what about the ingredients supporting survival?" continued Marcus, his eyes shining with the excitement of making a discovery, albeit a discovery

Grand Alf had already suspected.

"We have to go to another place to test that theory," exclaimed Dr Ramos, leading the way out of the dinosaur exhibit.