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Editorial

Original Sinn

The Editor occasionally indulges in a touch of autobiography, inevitably including references to colleagues, friends, or family. Whether these episodic sketches are perceptive is hardly for the Editor to judge; but conceivably they do have some interest to readers of *Perception*, as we are a family scattered across the world, linked by questions and answers, for ever trying to communicate difficult ideas to ourselves and each other. We start from a great variety of origins, assumptions, and philosophies. We share, yet each have our own Cosmos. Here, I risk a brief account of my father's Cosmos. This is significant for the origin of the Editor's perception—as our German friends would put it, his Sinn—which presumably has had some effect over the first twenty five years of the life of *Perception.*

My father was Christopher Clive Langton Gregory. He was an astronomer. Spending most of his professional life measuring the distances of stars, by heliocentric parallax, he scaled the Universe—his first Cosmos. One is enough for most people; but he had two, as for the last ten years of his life he edited a journal called *Cosmos*. This he wrote almost entirely by himself with his second wife, together setting every word by hand in lead type and printing it on an ancient press. The cover of *Cosmos* was simply thick brown paper, which was effective and economical. Its contents ranged through physics and philosophy of physics, to questions of perception, and especially imagery, but he was really concerned to rewrite science. Perhaps CCLG was more interested in providing answers than listening to questions; so it was hard to get a word in edgeways, even to ask what he meant by oracular statements: such that physics is irrational; and that Lashley had found that, as engrams are not in the brain, mind cannot be entirely brain-based. He had a cosmological theory, which I confess never to have understood, called the O-Structure. This was described in a book (Gregory and Kohsen 1959) printed privately from the small institute he founded, and funded—The Institute for the Study of Mental Images (ISMI)—upon retiring as Director of the University of London Observatory.

CCLG was the first Director, planning the building, the domes, and assembling the instruments. The Grand Opening took place in a great storm. The amateur astronomer and film star Will Hay, who lived nearby in Mill Hill was unable to come as his house was struck by lightning.

Observatories are temples to science. A night in the dome, with the huge telescope silently following the stars, to the insistent rhythm of the master clock, is an inspiring experience one never forgets. This observatory is now in superb working order, attracting new generations of students each year. The present Director, Professor Derek McNally, is concerned at the worldwide optical and radio pollution that is blinding astronomy to the cosmos.

CCLG was brought up in a substantial Victorian house, Melville, every wall covered in creeper, the ivy looking in through the windows. His father (whom I hardly remember) was a charming gentle clergyman. He was athletic, playing cricket, with a Cambridge Blue for running. On one occasion he took part in every event in a local athletics meeting, winning most if not all. He was so stiff he could hardly walk for a week afterwards. This was the limit to his eccentricity. CCLG's mother, Octavia (eighth of a family of thirteen), was very different. When her husband died quite young, like Queen Victoria she wore full black mourning for the rest of her long life. She had a passion for animals: a large aviary, crown cranes on the lawn. Her garden was idyllic: scented walks, a pond with a fountain where rainbows played, and a huge mulberry tree in which my sister and I would hide, in the friendly branches. In her diary, my entry into the world merits a couple of words, in a profusion of successful and failed flowers! The only creature which could dominate my grandmother was her adored monkey—Pat-A-Pan—named after Horace Walpole's pet monkey. She was an authority on Walpole's *Letters*, and though he lived in the previous century she was devoted to him. Pat-A-Pan's room was a small chapel, with stained glass windows illuminating an altar, with two thousand sequins stitched by my grandmother, on which he slept. She was an unsung poet:

Pat-A-Pan

Lonely and sad in a London store
Sits a little monkey "FOR SALE"
Pathetic he looks and his eyes implore
What is he saying in monkey lore?
Does he know he is going to be sold today,
with his downy coat of gold and grey,
Soft furred from his head to his tail.
....

Out of the bustle, traffic and cold
Swiftly I bore him away
My sweet little monkey, bought and sold
But a prince of monkeys today.
His little pink bed is spangled with gold,
He lies in his nest for hours,
And he plays all day in a garden gay
With birds and trees and flowers.
....

Regrettably, the little monkey (which littered the conservatory with grape skins) was a boyhood enemy. He bit me on the arm, with a lasting scar. My grandmother was totally unsympathetic: "Tut-tut—what a fuss!" It could easily have been a death sentence, from virus B which has no antidote.

Melville preserved the nineteenth century well into the twentieth. The creepered creepy house was lit entirely by gas, its musty smell with me now as I write. Change was rejected. She never spoke on the telephone, which was one of her many passionate hates. When the telephone people routed the wire for a neighbour's telephone across a corner of her lawn, she got her gardener to get on his ladder and cut the offending wire—three times—before they admitted defeat and moved it away from her property. She always got her way. But she had no mechanical sense. Tripping over the runners at the back of a rocking chair, she got the gardener to cut them off. An extrovert male visitor flung himself into the chair which turned a backwards somersault, landing him in a china cabinet. What she thought of science I never discovered.

Melville was in the county of Dorset, at Parkstone. This is where Alfred Russel Wallace, codiscoverer with Charles Darwin of Natural Selection, retired, as the local climate favoured his flowers. CCLG played in Wallace's garden as a boy and remembered conversations with him as very special. At Melville, he collected fossils and made telescopes. Conceivably they released him from the oppression (which he called the 'cover') of this time and, as we would see it, overprotected place. As children, my sister Irene and I were not allowed to run on Sunday, talk at meals or (theoretically) go through the green baize door to the servants' preserves. It is now a lost privilege to have experienced the Victorian life of Dickens and Thackeray as it continued here until the Second World War. I visited my grandmother for the last time wearing RAF uniform; she now in her nineties, in full mourning of over twenty years. Seeing, at last, across the generations, time seemed to stop, memory frozen.

CCLG was of the generation of the First World War. It interrupted his reading physics at Cambridge. He served in France, surviving the battle of the Somme, and no doubt he was mind-marked by the now fortunately hard to imagine ghastly experience of the trenches. He often said that the mud and the rotten food and the rats were worse for both sides, and a more enduring memory, than the shells. Towards the end of the war, he left France to carry out experiments on sound ranging for locating guns, on Salisbury Plain near Stonehenge. He told a memorable ghost story which I accept as entirely true.

On a dark night of lashing rain and thunder, laced with lightning, he sat in the laboratory hut by himself reading Dracula from the light of a candle. To the sounds of the violent storm outside, there was added an insistent, almost regular tap-tap tapping. Too regular for the wind—what was it? The sound came from the window.

Immersed in *Dracula*, he could not bring himself to look up to discover the truth. Then, throwing down the book, he saw by the light of the candle an enormous face outside the window, with huge green teeth, tapping the glass. Rushing outside—he found an ancient donkey, prising fresh putty from the window frame.

He started his career as First Assistant of the National Observatory of Egypt, for two years being the official observer of the moon, for starting Ramadan. Upon seeing the sliver of the new moon he would telephone the king. Then the chanting of the mosques commanded fasting throughout daylight for a month. He was rather proud of this. He was also proud of an odd assortment of skills, such as throwing boomerangs and lassoes, and escaping from being tied up with ropes. He would have been at home in a circus. Holidays lasted all summer, at Melville, and a huge camp, with ex-army tents, in Cornwall. One year my parents with their friends made swords and armour to enact *Abdul Abulbul Amir* in the middle of the night in the ruins of Tintagel castle. The villagers saw the distant flashing swords as the work of ghosts. The legend of the haunted castle continued for years.

In his generation, the occult, and supposed evidence for paranormal phenomena, were interesting to many physicists and taken seriously as a largely hidden aspect of the cosmos. C C L G spent years investigating a famous physical medium—with apparatus including infrared light beams, and detectors and a tilting table with electrical contacts to a flash camera, built in the observatory—installed in the sitting room of Lord Charles Hope. On his return from an evening filled with trance-induced phenomena of bizarre kinds, I would be enthralled by his accounts of levitations, luminous trumpets moving around the room, an invisible hand holding a handkerchief so tightly it tore in halves. Yet, somehow, the apparatus never worked quite as designed. Two images appeared when there should have been but one, from the flash. The galvanometer registered something—ectoplasm?—interrupting the infrared beam along the gauze curtains; but was the circuit secure? Was it impossible for the medium to have put something in the beam? Why was darkness essential for the phenomena? I don't think C C L G was ever quite convinced, though he continued to take the paranormal seriously to the end of his life. He knew the celebrated writer on haunted houses, Harry Price, and was a close friend of Molly Goldney, who with others exposed the elaborate fraud of the Most Haunted House in England, Borley Rectory. For C C L G there were occult forces of healing and evil, and probably telepathy and clairvoyance in the cosmos. There was an Evil Eye that could damage plants in his mother's garden or upset experiments in science. Conceivably, the new ideas of quantum physics so challenged physical concepts that the occult seemed relatively reasonable, a view supported by much psychology of the time, especially C G Jung and the dream experiments of J W Dunne, foretelling the future. Dunne was a first-rate aeronautical engineer, who designed the first stable aeroplane. His *An Experiment with Time* (1927) was the rage. No doubt also, Einstein's cosmology released this flood of dream experiments, which C C L G found fascinating, and if not entirely convincing at least worth spending his time investigating. Dunne wrote [Introduction to the third edition of *An Experiment with Time* (1934)]: "It [the first edition] contains the first analysis of the Time Regress ever completed. Incidentally, it contains the first scientific argument for human immortality. This, I may say, was entirely unexpected. Indeed, for a large part of the time that I was working, I believed that I was taking away man's last hope of survival in a greater world." Given the experience of the war, it is hardly surprising that C C L G, and thousands of other scientists and intellectuals, became hooked on infinite time and a ghostly world preserving their own.

The Editor's interest in eyes and brains, and issues perceptual, started as a boy looking at stars through a telescope in his father's observatory, wondering what was really there beyond the flickering flames of its images. The flickering, of course, was not of the stars themselves, but due to atmospheric disturbance of light, at the last stage of its immense travel through space. So immediately illusion contaminated visual truth. At best, the revealed truth was obviously incomplete. Like C C L G, I wanted to include the astronomer's mind in the cosmos of the heavens. Now our brain-based studies of perception move in this direction. Perhaps more surprising, I did make a small step towards telescopes being intelligently perceptual. Now, thirty years on, this is becoming a reality, if by rather different methods.

Sir Isaac Newton was well aware of the turbulence problem, which he thought insoluble. In *Opticks* (1704) he wrote:

> "If the Theory of making telescopes could be fully brought into Practice, yet there would be certain Bounds beyond which Telescopes could not perform. For the Air through which we look upon the Stars is in perpetual Tremor; as may be seen by the tremulous Motion of Shadows cast from high towers, and by the twinkling of the fix'd stars. But these Stars do not twinkle when viewed through Telescopes which have large apertures. For the Rays of Light which pass through diverse parts of the aperture, tremble each of them apart, and by means of their various and sometimes contrary Tremors, fall at one and the same time upon different points in the bottom of the Eye, and their trembling Motions are too quick and confused to be perceived severally..."

Newton concludes: ..."The only remedy is a most serene and quiet Air, such as may perhaps be found on the tops of the highest Mountains above the grosser clouds". My arrogance was to question this conclusion, when a possible solution struck me, in the darkroom while looking at sandwiched stereo positive–negative transparencies in the enlarger. Imagining a telescope's image lying on its own negative (so giving a running autocorrelation, which could open or close the shutter of a second camera) led to designing and building a disturbance-rejecting telescope camera, with my colleague the superb engineer Stephen Salter. With support from the Paul Instrument Fund of the Royal Society, we tried it out on large telescopes in New Mexico and Arizona, under the auspices of the US Air Force, for possible use in selecting lunar landing sites. We ran into an annoying technical problem, but this is another story. The immediate point is that almost certainly I would not have thought of it without the boyhood experience of my father's observatory. Its principle represented a practical use of Kenneth Craik's Internal Models, and it led me to an interest in Artificial Intelligence for investigating brain mechanisms. Just possibly something of the motivation came from trying to beat C C L G at his own game? I certainly hope not. New methods of active optics (including neural nets) promise to give extremely high resolution in large Earth-based telescopes, even better than in the superb orbiting Hubble. Our idea and experiments made no real contribution, but at least the dream was there, and it did point in the right direction.

In his sixties, C C L G set up his Institute for the Study of Mental Images. It was based in a dilapidated Edwardian mansion surrounded by acres of rhododendrons, at Church Crookham near Guildford in Hampshire, which he bought in about 1950. With its bare dusty rooms, it was a ghostly echo of his boyhood home, Melville. This was the bizarre home of his second family, his daughters Hilary and Catherine, who are half-aunts younger than my children Mark and Romilly. He died in an accident in 1964 while posting a letter. *Cosmos* and ISMI are no more. This was the year of the start of the project to make a smart telescope using a principle of perception. I shall never know if he would have approved; or even, possibly, regretted not having thought of such a scheme himself. In 1939 he told me that it would take a thousand years to land on the Moon. Experts can be curiously blind. What we need is rational optimism—if this isn't an oxymoron.

Richard Langton Gregory

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