

# Donal Fitzpatrick

*The indifferent patience of accidents*

WORKS ON PAPER

# “Stone, how you dream”

*Janette Orr*

Stone, how you dream  
In the days of stone  
Turning over and over  
To catch the sun

## Geology Memory—*Robert Whyte*

- I Geology begins with gravity and condensation, planet-forming processes in interstellar clouds of dust and gases. In our minds these processes overlap with cosmology, which also deals with clouds of energy moving, expanding and coalescing, but not on such a literal, material level as the formation of planets, one of which we now inhabit. Cosmology evokes clouds. Condensation feels like rain.

Just as all raindrops need a particle of matter to condense moisture vapour in the air, planets need a seed of matter to begin forming from part of a ring, disc, or band of cloudy matter surrounding a dense, heavy, storm cloud of matter on its way to being a star. Over time, the orbiting cloud of matter, which is not uniform, tends to clump. These clumps stick

together and attract more particles and gases, growing, becoming gravitationally stronger, continuing to grow and capture more matter, mostly rocks and ice, until they reach more or less Earth size. One of these processes produced the Earth itself.

- II The most abundant elements in the universe are hydrogen, by a long way, then helium, usually only found in stars, followed by oxygen. The next most common element is carbon, very common and extremely adaptable. It is able to combine with many other elements to produce a dazzling array of products including Galliano, a herbal liqueur, and The Elephant Celebes, a painting by Max Ernst. After carbon comes neon, rather rare on this planet, about one thousandth as common as silicon and only found in advertising signs. In the universe's top ten, neon is followed by iron, nitrogen, silicon, magnesium and sulphur.

If we go back to the Big Bang , a remote (occurring somewhere between 3.76 and 3.82 billion years ago) and rather problematic event when ‘everything’ was created from nothing and no-one has any idea what came before it, this so-called ‘everything’ was rather plasmic, composed of ions, electrons, and neutral particles. It was as close as you can get to pure energy, expanding rather rapidly into space and then cooling down to form simple elements including hydrogen, helium, lithium, beryllium and boron.

The world we know today, and walk around on, is a result of the three Rs. Reduce (the amount of hydrogen), re-use (hydrogen as fuel in stars), and recycle (cook hydrogen up inside “advanced” stars into elements higher up the periodic table). This takes time.

Conditions on planets are very local and eccentric. In our case, iron is the most abundant element making up the Earth, and oxygen is the most common element in the Earth’s crust. This is not true of everything else, because about 84.5 per cent of the universe is ‘believed’ to be dark, being 26.8 per cent dark matter (a mysterious substance not composed of chemical elements, and even lacking protons, neutrons or electrons), and 68.3 per cent dark energy (required to explain the accelerating expansion of the universe). The key word here is ‘believed’.

Most elements (you see how niftily we sidestepped dark matter there) are solids at conventional temperatures and pressures. A few are gases but we can disregard these because they have little bearing on the topic in question, except when they combine with energy to produce change. They then become of

paramount importance, but more about this later.

- III Solids are fluid. This may seem contradictory at first, but geological time is so far beyond our biological understanding we usually represent it with time lapse photography where each frame is a million years. With this view rocks and landscapes which previously seemed to our eyes fixed and immutable, apart from a little surface weathering, are seen to swirl and intersect, twist and jink, overlap and subduct, mix and slide.

Rheology is the study of the flow of matter, primarily in the liquid state, but also as soft solids under their own tendencies or in response neighbouring forces. With the benefit of time lapse, everything looks like rheology.

If you study an individual image from any time-lapse sequence, nothing appears to be moving at all. This is conceptually, if not literally, true. Yes, the image is a representative instant, if we think of the image as an “idea”. It is a snapshot, a frozen moment. However this concept avoids considering the time taken to make the image, or even to look at it long enough to begin processing it with your intelligence, which amount to eons in sub-atomic and sometimes even everyday time. Travelling down this path to contemplate relativity will take us into realms beyond the scope of this discussion, a course of action perhaps to be undertaken another day. For now, we will return to geology.

IV In a time lapse measured in millions of years, it is assumed any present image, meaning the one you are looking at in isolation, is a consequence of the preceding million years. In those million years things have happened. Major events of significant duration, often involving a change of state, leave obvious traces. We may deduce from these, material history and possibly infer from the evidence something about the forces involved. For example, Mount Everest is made of marine limestone. This means the entire mountain was once not only below the surface of the ocean, and the summit made up of calcium carbonate, mostly skeletal fragments of marine organisms like coral and other small animals with hard shells.

The million-year-snapshot-technique presents a problem for vanishingly short episodes of time, such as brief volcanic

eruptions, or the existence of humans, which we might miss altogether if they a) occurred somewhere in the middle of the preceding million years, b) happened to produce very little change, and c) were subsequently obliterated, altered, eroded, erased or overwritten.

Events, even brief events, however, are not entirely lost, for all activity leaves traces, even if ever so faint. In recent times, we have got much better at finding faint traces, especially in the field of fluvial geomorphology.

Fluvial geomorphologists focus on rivers, how they transport sediment, migrate across the landscape, cut into bedrock, respond to environmental and tectonic changes and interact with humans. Practitioners of this science have recently developed extremely fine-tuned techniques relying on optically

stimulated luminescence, having discovered how the luminescence of quartz and feldspar minerals is reset by light exposure during flows of sediments down rivers, then is built up again as a result of ionising radiation when these minerals are buried. This is increasingly unravelling geological history based on the study of the present, which let's face it, is how geology has always operated, only now it is at much finer scales resulting in relatively high-resolution accuracy.

- V We now turn to the mental apparatus necessary for survival, and how it is related to our interior 'maps', understandings, beliefs and assumptions, how it interacts with the world and how it can be illuminated by a series of images dealing with geology as a metaphor for memory.

The everyday visual images we have in our minds which help us avoid walking into walls, or off cliffs, are made up of a combination of hard-wiring, just-in-time personal cartography, and concepts which help us predict possible consequences and to deduce what, why and how things happened to get us here where we are right now.

We unravel, at any one instant, a number of overlapping stories. This is sometimes called consciousness, but it could just as easily be called fiction. We exist as raw data in a flow of space, time and matter. Our senses are inputs for raw data, codified as lumps of information. A hurtling snowball is a fine example of a lump of information, especially when it explodes in your face.

Our senses can handle only a few narrow bands within raw data, excluding much

more than the obvious 'dark matter' and 'dog whistling', but these narrow bands are more than enough to get us by. Even if we lose access to whole tranches of sensory information we can still get by, with more or less difficulty. Completeness of sensory apparatus in data gathering is not an issue. For a fiction you only need a synopsis.

This whole process is responsible for generating the convenient fiction we know as 'the continuing self'. David Hume pointed out we tend to think we are the same person we were five years ago. Whether the substance of this proposition is true or not, the important part to recognise is our tendency to believe it. As Daniel Dennett said, selves are a kind of convenient fiction, like a 'centre of gravity' which is just a helpful construct for solving physics problems. For example the centre of gravity of a hoop is a point in

thin air. Dennett observed we constantly tell ourselves stories to make sense of the world and we feature in these stories as a character. He asserts this convenient but fictional character is the self.

We occasionally test this fictional self against reality but perhaps not as often as we should. "I fall upon the thorns of life, I bleed." Yep, tick that one off. "Your blind spot regarding your own biases is amplified by your tendency to attach greater credence to your own introspections about potential influences on judgement and behaviour than you attach to similar introspections by others." Check.

Apart from everything else, like indolence, lack of curiosity or brainwashing, assiduously verifying your assumptions would be annoyingly time consuming and painful. "Flame is hot and it burns."



Locked in, don't need to check this one anytime soon.

Memory, being an even more incomplete fiction of the constantly unfolding incomplete fiction we call our 'continuing self', is fantasy at a further remove.

In direct contrast to misinformation gathering and concoction-retrieval by humans with sensory apparatus, storage systems and processing power – rocks and landscapes embody their history with extreme fidelity and accuracy (except for the missing bits, but we must remember the bits missing are not really missing, they are just not here). The materiality of rocks and landscapes are not subject to opinion, belief, or persuasion. They are therefore less subject to disbelief and more truthful than us. We can appreciate this by studying their composition and arrangement.

VI Around 315 million years ago the coastal plains of South East Queensland were being formed 1,000 metres below sea level. The coastline was somewhere between Toowoomba and Dalby. The landscape was fresh and raw. It was raining. Mud, sand and rocks were being torn from the mountains by raging rivers, spewing out into an ocean trench off the edge of the continent, where under-sea volcanoes were erupting.

These sediments were then pushed up in a massive mountain-building event caused by tectonic plates colliding. It didn't happen overnight. It took 80 million years.

Cut to – more erosion. Over the next 210 million years, two thousand metres of these new rocky mountains were stripped away to reveal the lumpy landscape west of Brisbane, the Gold Coast and

the Sunshine Coast. Some of these 'new' sediments filled basins. Both of these types of rocks can be seen in most road cuttings around South East Queensland. The old sediments, which were uplifted, cooked, squeezed, ruptured, stretched, twisted, folded and flattened, became metamorphic (or more properly meta-sedimentary) rocks. The newer sediments took the form of sandstones, siltstones, mudstones and shales.

Meanwhile dinosaurs evolved, lived for 166 million years, then were wiped out, along with three quarters of all life, in a cataclysmic extinction event 66 million years ago. Mammals evolved about 55 million years ago. It was still raining.

Twenty-three million years ago enormous volcanoes from Mount Warning to Maleny poured out highly-fluid basalt lava. These lavas covered

those more ancient rocks and landscapes. However it was still raining and erosion washed most of these new basalts away. When they were formed, the basalt lavas filled valleys over a kilometre deep. Most are now gone. A few remnants remain, supporting rainforest with rich soils, in places like Mount Tambourine, Lamington Plateau, Conondale and the Blackall Range.

Then followed a long period of stability. In terms of major geological events and forces, nothing much happened in South East Queensland over the last 21 million years to the present day. At least nothing as major as the formation of the Himalayas, which mostly happened at shocking speeds over about the same period.

Local activity in South East Queensland may have been rather dull in terms of

plate tectonics, but there has been one remorseless process which means a lot to us now in our daily lives. This is weathering. Most of the weathering has been erosion, or the removal of material, though newer sediments have also been laid down and compressed into rock.

If the erosion had not occurred, we would all now be buried under about two kilometres of rock. This would make getting to the office or going out to dinner a lot more difficult.

Even closer to the present, on a human rather than Everest scale, relatively large changes have occurred simply because of changing climate. Our present sea level is nearly the highest it has been over the last 200,000 years, because of warm oceans melting polar ice. Yet the local sea level has fallen, to more than 50 metres below the

present level, nine times during this time frame.

In a period of very rapid warming to about 7,000 years ago, sea levels rose even higher than they are today, by about two metres. The Pacific Ocean came up to the mouth of Bulimba Creek. Sea levels then dropped a couple of metres, but now are rising again.

VII If you erase a pencil mark, you may be able to discern a faint trace left behind, but probably not whether it was made with a 2B or a not 2B pencil. If it is then drawn over with chalk, and crayon, ink, charcoal, pastel and more pencil, some then erased, dissolved or smudged and blended, its history might become mysterious, sometimes hidden.

The process of making images also may involve entire layers, many of which may

be either obliterated or covered over. Each sedimentary layer in an image informs the layer obscuring, or obliterating it, even when the overlaying forms are in opposition to the ones below. A line becomes a contour, becomes a ridge, is hatched and scored, then shaped or shown by partial erasure. The surface of an image often hides its history, but not completely. In many cases underlying layers are intentionally left visible, as fresh as the time they were made. In other cases they may have been intentionally exhumed or revealed.

In the image-making process, overlaying and erasing may continue forever, but this would not be helpful if they were to be displayed, in this case rather like the snapshots of many different points in geological history are displayed in rocks and landscapes.

When the forms in the image reach a certain tension sufficiently evocative of its making and of its possible futures, the artist may declare this moment to be the 'present' for this particular work, and allow it to be displayed. Its engagement with our perception then splits off a myriad of interpretations, at least one for each individual, sometimes many.

When the ideas shaping the works themselves refer to the strange, perhaps remote, perhaps misleading accretion or sedimentation in the mind accessed through memory, this sets up another layer of interpretation and combines 'form' and 'content' in compositions with communicative power.

VIII A thoughtful viewer may review, with increased skepticism, their own processes of maintaining a continuing sense of self. Our individual DNA is a set of instructions

for building bones, organs, tissues and cerebral architecture, but experience and memory do not work the same way, especially in constructing psychological identity.

The works by Donal Fitzpatrick displayed in this exhibition are a result of investigating Art as a physical manifestation of memory, as though all of that slippery stuff of memory, with its amalgam of fiction, truth and the future anterior, needed to be made physical to our thinking in order to be worked out.

He suggests image making may have a capacity for storing information about elusive psychological constructions which interplay with perception to generate new inputs. The intention is not to create an image of a hammer as if the philosophical problem was a nail, but to show complexity as an iterative causal

process influenced by hidden layers of experience, some of it no longer capable of being retrieved.

This exhibit follows and overlays a previous sediment of visual artworks accreted optically and historically, "Fossil Light", at Woolloongabba Art Gallery, Friday 25 February - 8 April 2011. Like reminiscences of a continuing self, "Fossil Light" displayed a series of paintings contemplating the relation of vision to duration, presenting a "geologic experience of time as an island of gravity". The theme encapsulated by the title suggests a pre-echo of both the materiality of transience in sediments as well as the relatively new technique of making historical chronologies of sediments by means of optically-stimulated luminescence in quartz and feldspar. The artistic concept has been materialised as scientific process, with

many parallels in fluvial geomorphology, of impermanence, overlays, erasure, movement, flow and transport through time to leave imperfect signatures represented by images of fabric and fragments of images.“

Debra Porch in her essay on “Fossil Light” relates how the paintings caused her consider, not of the continuity of self, but of the continuity of experience across selves, in her reflections on the Polish Renaissance astronomer, Copernicus, observing the same sky and stars as she observes today. She referred to the works in “Fossil Light” as “orbiting on their own, moving quietly, steadily, simultaneously suspended and grounded in their own definition of time”.

These current works on paper evoke similar thoughts combined with material and conceptual notions of fragility, discontinuity, absence and presence.

Robert Whyte,  
Brisbane  
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<sup>1</sup> Woolfson, M.M. (1993). “Solar System – its origin and evolution”. *Q. J. R. Astr. Soc.* 34: 1–20.

<sup>2</sup> Kerminen et al, Cloud condensation nuclei production associated with atmospheric nucleation, *Atmos. Chem. Phys.*, 12, 12037–12059, 2012.

<sup>3</sup> These two forces, or entities, are more or less balanced, and their genesis cannot be easily assigned to one or the other. The orbiting band might be a product of the dense chemical experiment at the centre. Or the chemical experiment may have expelled the band but then captured it with gravity as an orbiting cloud.

<sup>4</sup> Woolfson, *ibid.*

<sup>5</sup> Suess & Urey, *Abundances of the Elements, Reviews of*

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- <sup>6</sup> Wollack, “Cosmology: The Study of the Universe”, Universe 101: Big Bang Theory, NASA, 2010.
- <sup>7</sup> E. M. Burbidge, G. R. Burbidge, W. A. Fowler, F. Hoyle (1957). “Synthesis of the Elements in Stars”. *Reviews of Modern Physics* 29 (4): 547–650.
- <sup>8</sup> Scerri, *The Periodic Table, Its Story and Its Significance*, Oxford University Press, 2007.
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- <sup>16</sup> Olley & Croke, *Reconstructing a 1000 year record of flood frequency in South-East Queensland using optically stimulated luminescence (OSL) dating of alluvial flood deposits and palaeostage indicators*, Australian Rivers Institute, Griffith University (2013 PhD Topic)
- <sup>17</sup> Ayer, *Language, Truth and Logic*, Penguin, 2001
- <sup>18</sup> Dennett “The Self as a Centre of Narrative Gravity”, University of Glasgow, 2009<sup>19</sup> Shelley, “Ode to the West Wind”, 1819
- <sup>20</sup> Fotopoulou, et al (eds), *From the Couch to the Lab: Trends in Psychodynamic Neuroscience*, Oxford University Press, 2012
- <sup>21</sup> Willmott, *Rocks & Landscapes of Brisbane and Ipswich*, 2nd Edition, 2012
- <sup>22</sup> Alberts, Johnson, Lewis, et al, *Molecular Biology of the Cell*. 4th edition, Garland Science, 2002.
- <sup>23</sup> Porch, et al, “Fossil Light” works of Donal Fitzpatrick, Woolloongabba Art Gallery, 2011

