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Curiosity

Some things are best seen at a distance. In Eric Carle's book *Papa Please Get the Moon for Me* (1986), a father silently obliges his daughter by building an enormous ladder on top of a mountain. Once captured, the moon slowly fades as its beauty is found to be contingent and relative. Carle introduces young children to different forms of knowledge; experiences constructed between the discoveries of Galileo and Kepler and tuned by the wonders of phenomena behaving badly.

In both art and science rendering things visible allows certainty and clarification. Plato implied that this relation between existence, truth and visibility was natural, and in the early twenty-first century we do not often dispute it. Photography was born of this need to capture, reduce and retain images. Recollection, if separated from an image, could lead to ambiguity or, even worse, forgetfulness and error. So when the photograph became confused with the truth, and seeing with verification, it seemed that the dominance of visuality would always remain. Making matter visible brings it into existence, and looking at it takes time. But this process has limits. The duration of vision means that often things move, change and transform before our eyes – as and when we are watching. As Descartes proved, our eyes are unreliable; a straight stick in water seems most definitely bent. In art and science other sensations come into play as the tools of mathematics and music (amongst others) suggest different approaches to the study of matter. Today, visualisation is not modelled solely on photographic capture; instead, scenes of continual invention, transformation and movement have become the media of the unseen.

The problems of visualisation were the catalyst for a symposium entitled *Illustrating the Unseeable*, which David Green and I hosted at the Dunedin School of Art in late 2009. At the time, we were concerned that our digital media students were limiting their activities to the service of representation, whether as 3D 'avatar' modellers or in visualisations for scientific projects (as one person said to me, 'the art makes science look pretty'). David and I felt that there were other relationships to be explored between art and science, and that the time-based tools of electronic media could themselves offer some alternative methods for understanding the unseen. We wanted to uncover the various ways that the unseen might manifest without being visualised: as network, as private space or knowledge, as imagination, as sound. A selection of papers from this symposium are included in this issue of *Junctures*.

Extreme environments already exist on earth. The sufficiency of earth's resources remains measurable yet unseen, and the need to pay attention is rendered more urgent each day. The death of eleven workers on the Deepwater Horizon oil rig in April 2010, the extraordinary rescue

of thirty-three miners trapped deep in Chile's Copiapó mine in October, and only today the death of twenty-nine workers in New Zealand's worst mining disaster for a century, all mark a peculiar interdisciplinary combination of technology, nature, work, and humanity. These events involve the unseen forces of labour and capital, and also point toward our responsibility to leave a living planet. They are key moments where the intangible is made tangible, and where people's lives are changed forever by forces unseen.

There is another question though: are there some things that should remain unseen? After the visible excess of the industrial revolution, science turned to the unseen. Marie Curie measured electrical charges to trace sources of radiation; Ernest Rutherford fired particles at a sheet of gold to discover the structure of the atom; and Albert Einstein discovered the wave-particle duality of light. These processes used control, light and force to illuminate materiality. At around the same time Franz Kafka penned *The Metamorphosis* (1915), and the unseen became associated with fear and concealment. Hiding under his sofa to protect his mother from his image, the creature that had once held down a reputable job as a travelling salesman finds his life taking on a disorientating and menacing complexity. Despite his best efforts at adaptation, Gregor dies alone, a shrivelled damaged shell of himself. The hidden mental processes of the unconscious may also explain Gregor's behaviour. Unearthing such experiences, Freud deemed the unseen meaningful. To see through the darkness was good, and offered a promise of hope and control.

Kafka and Freud wrote before the age of terror. Their works uncannily anticipate the mutation of warfare from direct physical and visual engagement to the hidden threat of unseen enemies; whether in the form of stealth bombers dropping warheads equipped with their own cameras, or distributed camps of disenfranchised young men hidden in mountain caves. The development of the searchlight marked the beginning of unseen warfare, and today eighty-eight searchlights are used in the place of New York's World Trade Towers, as a memorial to the victims of 9/11. Illumination is one tactic to address these technologised relations between vision and light, absence and invisibility, representation and materiality. To approach the unseen in the early twenty-first century, we must deal with such extremity.

The first three essays in this issue connect visibility and representation via three very different approaches. Allan Smith introduces us to Leigh Martin's speechless paintings rendered in noise. In the mobilised perceptual event of painting, movement is captured and, at once shining and vanishing, the image is made visible through the enactment of time. Tracing a detailed path, Smith marks the progression of fine lines of difference and similarity. Bridie Lonie triangulates the art/science relationship through three modes of perception: representation, use and participation. These differing degrees of virtuality show the difficulty of cross-disciplinary practice that is truly participatory. Lonie's engagement with the historical ideals and complexities of the art/science divide reminds us of the necessity for revisiting the model of paradigm shift as mooted by Thomas Kuhn fifty years ago.

The sun holds 98% of all matter in this solar system. David Haines and Joyce Hinterding's *EarthStar* uses a range of devices to bring that matter closer. The photoessay included here documents their research into frequency and sensibility conducted through a Hydrogen-Alpha telescope. Synesthesic approaches tend to conflate one sense with another; Haines and Hinterding do the opposite, drawing scent, image and sound out of frequency and vibration. Simultaneously moving toward the sun and turning us away from it, the perceptual energy of their research gives us tactility of vision.

While Smith, Lonie and Haines and Hinterding all perform a focusing of the lens of the unseen, the next three essays introduce friction. Yuk Hui unpacks the implications of imaging control by

placing two contemporary worldviews alongside each other: the so-called computational turn, driven by networked ecologies, and French curator Nicolas Bourriaud's 'altermodern,' which has come to dominate the languages of exhibition. In Hui's essay a map of a network that includes everything is read alongside an exhibition model that could encompass everything, via a worldview that did encompass everything.

Network technologies are given a different expression by Julian Priest. *The Future Network* is a prose poem that was first performed at Downstage Theatre in Wellington, New Zealand. Priest discusses the balance between planetary energy, information and entropy, and contrasts a future energy network based on renewables with the current fossil-fuel based energy infrastructure. In Priest's poem, the Internet serves as a model for infrastructural change and provides a critique of existing energy provision.

Pete Gorman also voices the network. Tracing his own teenage investigations into earth batteries and what some call 'rock music,' Gorman develops a methodology for sonification of the electrical and telluric currents that circulate beneath the surface of the earth. The development of electricity, and its attendant need for safety and control, means that huge currents are fed back into the immediate surface beneath us. Without resort to ventriloquism Gorman performs his sonifications, introducing listeners to the affective resonance of mains hum.

The last two essays address both collaborative process and interdisciplinary communication dependent on shared tools. Rethinking supervisory experiences lead Margaret Pack to a theatrical model of multimedia presentation. Through the development of a set of scenarios, Pack encouraged colleagues to participate in the production of short video clips that give students a hitherto unseen direct experience of the intimacy of the counselling relationship. Technologies of reproduction serve to enable the necessary and safe distance between event and experience, but also contribute methods that allow students agency within the teaching environment.

Instruction in the details of a new topic often entails an encyclopaedic approach. Claire Beynon, though, uses the intensity of nano-scale microscopy to investigate unicellular foraminifera; creatures that seem to approach the world aesthetically. Beynon's seven meditations are the result of personal and intimate communities formed in the particular environment of the Antarctic, an extreme environment where art and science must work together.

This issue concludes with three reviews of events and experiences read in situ. David Green reviews the *Illustrating the Unseeable* art/science symposium by introducing a backstory of increasing technical sophistication in the development of the cinematic illusion and filmic suspension of disbelief. Cushla McKinney reviews one of a number of books published recently that address the artscience relationship and highlights the need to balance scientific and creative energies. Bridie Lonie reviews the NIEA *HotHouse* symposium where design, ecology, utopia and the material impacts of climate change contributed a complex agenda for cultural and aesthetic resilience and development.

The NIEA *HotHouse* symposium, like Haines and Hinterding's *EarthStar* and Priest's *Future Network*, remind us of scale and the importance of thinking very carefully about our next move. Where we look next will determine future behaviours, relationships and economics; inevitably it will teach us what kinds of matter survive into the next centuries. We are immersed in a culture of the visual. Leaving some things unseen is as crucial now as it was in the eighteenth century to bring them to light.