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**WALKING WITH DRAGONS:
AN ANTHROPOLOGICAL EXCURSION ON THE WILD SIDE**

Tim Ingold

University of Aberdeen

tim.ingold@abdn.ac.uk

Department of Anthropology
School of Social Science
University of Aberdeen
Aberdeen AB24 3QY
Scotland, UK

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Facing the facts

In the year 1620, the English philosopher-statesman Francis Bacon set out a plan for what was to be a massive work of science, entitled *The Great Instauration*. Dedicated to King James I, who had recently appointed Bacon as his Lord Chancellor, the work was never completed. In his prolegomenon, however, Bacon railed against traditional ways of knowing that continually mixed up the reality of the world with its configurations in the minds of men. If only the mind were as clear and even as a perfect mirror, then – said Bacon – it would ‘reflect the genuine rays of things’. But it is not. Cracked and deformed by flaws both innate and acquired, by instinct and indoctrination, the mind distorts the images that are cast upon its surface, by way of the senses, and cannot – if left to its own devices – be relied upon to deliver a true account of things as they are. There is but one way out of this predicament, Bacon argued, and that is by appeal to the facts. ‘Those’, he wrote, ‘who aspire not to guess and divine, but to discover and know, who propose not to devise mimic and fabulous worlds of their own, but to examine and dissect the nature of this very world itself, must go to the facts themselves for everything’.¹

Bacon’s words have an unmistakable contemporary ring. Today’s science continues to found its legitimacy upon its recourse to the data, which are repeatedly checked and rechecked in a never-ending search for truth through the elimination of error.² And for the most part the sciences of mind and culture, psychology and

¹ Citations from *The great instauration: the plan of the work* are drawn from the standard translation by James Spedding, Robert Leslie Ellis, and Douglas Denon Heath, in *Works of Francis Bacon, Baron of Verulam, Viscount St. Alban and Lord High Chancellor of England, Vol. IV* (London: Spottiswoode, 1858, pp. 22-33), pages 27-28. The text is also available at <http://www.constitution.org/bacon/instauration.htm> (accessed 4 November 2011).

² At the time of writing, a team of scientists led by Professor Antonio Ereditato has just reported that the neutrinos they have been blasting through a tunnel under the Alps have reached speeds faster than that of light. The team’s findings, based on some fifteen thousand separate observations, have caused consternation in the world of particle physics. Commenting on the furore, the leader writer in *The Guardian* (24th September 2011) opined that ‘the first thing in science is to face the facts; making sense of them has to come second’. *Plus ça change...*

anthropology, have ridden on the back of the same enterprise. That is to say, they have colluded in the division between what Bacon called the ‘world itself’, the reality of nature that can be discovered only through systematic scientific investigation, and the various imaginary worlds that people in different times and places have conjured up and which – in their ignorance of science and its methods – they have taken for reality. Where anthropologists busy themselves with the comparative analysis of these imaginary worlds, psychologists purport to study the mechanisms, presumed to be universal, that govern their construction. All agree that the realms of reality and the imagination should on no account be confused. For the very authority of science rests upon its claim to disclose, behind the home-made ‘figments’ that the imagination paints before our eyes, the facts of what is really there. One can of course study figment as well as fact, so as to deliver what many anthropologists still call ‘emic’ rather than ‘etic’ accounts, but to mix the two is to allow our judgement to be clouded by error and illusion. ‘For God forbid’, as Bacon put it, ‘that we should give out a dream of our imagination for a pattern of the world’.³

I want to argue in this lecture that Bacon’s injunction, which modern science has taken to its heart, has had fateful consequences for human life and habitation, cutting the imagination adrift from its earthly moorings and leaving it to float like a mirage above the road we tread in our material life.⁴ With our hopes and dreams suffused in the ether of illusion, life itself appears diminished. Reduced to biochemical function, it no longer gives cause for wonder or astonishment. Indeed, for those of us educated into the values of a society in which the authority of scientific knowledge reigns supreme, the division of real life and the imagination into the two

³ Bacon, *The great instauration*, pages 32-3.

⁴ Here, I am developing an argument initially sketched out in an essay entitled ‘Life beyond the edge of nature? Or, the mirage of society’ (in *The mark of the social*, edited by J. B. Greenwood, Lanham, MD: Rowman and Littlefield, 1997, pp. 231-252), see page 238.

mutually exclusive realms of fact and fable has become so engrained as to be self-evident. The problem, in our estimation, has been one of how to reach some kind of accommodation between the two. How can we make a space for art and literature, for religion, or for the beliefs and practices of indigenous peoples, in an economy of knowledge in which the search for the true nature of things has become the exclusive prerogative of rational science? Do we suffer the imagination to persist in our midst, or tolerate its penchant for fantasy, out of a compensatory wish for enchantment in a world that has otherwise ceased to enthrall? Do we keep it as a sign of creativity, as a badge of civilisation, out of respect for cultural diversity, or merely for our own entertainment?⁵ Such questions are endemic, yet the one thing we forget in posing them is how hard it is, in our experience, to split the reality of our life in the world, and of the world in which we live, from the meditative currents of our imagination. Indeed the problem is the very opposite of what we take it to be: not of how to reconcile the dreams of our imagination with patterns in the world, but of how to separate them in the first place.

Historically, this separation was but slowly and painfully achieved, in the religious upheavals of the Reformation and the turbulent beginnings of early modern science, in which Bacon – along with his exact contemporary, Galileo – played a pivotal part. But the historical process is recapitulated today in the education of every schoolchild who is taught, on pain of failure in his or her examinations, to distrust the sensuous, to prize intellect over intuition, and to regard the imagination as an escape from real life rather than its impulse. Almost by definition, it seems, the imaginary is unreal: it is our word for what does *not* exist. As every modern parent knows, for example, there is no such thing as a dragon. We grown-ups are convinced that

⁵ This latter view is exemplified in the pronouncements of science policy makers who support public funding for scholarship in the arts and humanities on the grounds of its direct or indirect contribution to the ‘creative industries’.

dragons are creatures of the imagination. Yet most of us would have no difficulty in describing one. Having seen pictures of dragons in the books we read when we were children, and that we in turn read to our own offspring, we are familiar with their general appearance: green scaly bodies, long forked tails, flared nostrils, sabre-like teeth and flaming mouths. These monsters roam the virtual terrain of children's literature alongside a host of other creatures of similarly fictive provenance. Some of them, of course, have real zoological counterparts. While the ever-popular *Tyrannosaurus rex*, perhaps the nearest thing to a dragon that ever lived, is conveniently extinct, other animals – from cobras to crocodiles and from bears to lions – are still around and occasionally claim human lives.⁶ Encountered in the flesh, we do well to fear them.

Their fictive cousins, however, give no cause for alarm, for the only people they can eat are as imaginary as themselves. Along with the stuff of nightmares, these creatures are sequestered in a zone of apparitions and illusions that is rigorously distinguished from the domain of real life. We calm the sleeper who wakes in terror, at the point of being consumed by a monster, with the reassuring words, 'don't worry, it was only a dream'. Thus the boundary between fact and phantasm, which had seemed momentarily in doubt at the point of waking, is immediately restored. What, then, are we to make of the following story, which comes from the *Life of St. Benedict of Nursia*, composed by Gregory the Great in the year A.D. 594? The story tells of a monk who encountered a dragon. This monk was restless: his mind was given to wandering and he was itching to escape from the cloistered confines of monastic life. Eventually the venerable father Benedict, having had enough of the monk's whingeing, ordered him to leave. No sooner had he stepped outside the precincts of

⁶ To this list could be added the *komodo dragon*, the largest extant species of lizard in the world, which inhabits the islands of south-eastern Indonesia. Though rare, these animals are extremely dangerous, and attacks on humans have increased in recent years.

the monastery, however, than the monk was horrified to find his path blocked by a dragon with gaping jaws. Convinced that the dragon was about to eat him up, and trembling with fear, he shouted to his brothers for help. They came running. Not one of them, however, could see any dragon. They nevertheless led their renegade colleague – still shaking from his experience – back inside the monastery. And from that day on he never again went astray, or even thought of doing so. It was thanks to Benedict's prayers, the story concludes, that the monk 'had seen, standing in his path, the dragon that previously he had followed without seeing it'.⁷

The shape of fear

Perhaps the monk of this cautionary tale was merely suffering from nightmares. Medieval people, however, would not have been so readily reassured as their modern counterparts by the realisation that in their encounters with dragons and other monsters, what they had seen was but a dream. They were not, of course, so gullible as to suppose that dragons *exist*, in the specific sense of existence invoked by modern people when they assert, to the contrary, that dragons do *not* exist. It is not as though the monk, in our story, came face to face with some other creature that, with the benefit of scientifically informed hindsight, we moderns can recognise, say, as a species of reptile. Remember that the brothers who came to his rescue saw no dragon. They saw nothing there at all. What they did see however, as Gregory's account repeatedly testifies, was that the monk was trembling. No doubt they saw the look of terror etched in his face. And yet when the monk cried out to be saved from the jaws of the dragon, his brothers understood his predicament at once. They did not react to his outburst – as the modern psychiatrist might react to the ravings of a lunatic

⁷ From Mary Carruthers, *The craft of thought: meditation, rhetoric and the making of images, 400-1200* (Cambridge: Cambridge University Press, 1998), page 185, author's translation.

escaped from the asylum – as the idiosyncratic, possibly drug-induced hallucinations of a fevered and unsettled mind that would be best recaptured and shut away, in solitary confinement, to avoid further contagion. Rather, they immediately recognised, in the vision of the dragon, the form of the monk’s otherwise inarticulable agitation, and imperilled themselves in responding, affectively and effectively, to his distress.⁸ The monk was on the point of being consumed by fear, and already felt the accompanying symptoms of personal disintegration. The dragon was not the objective cause of fear; it was the shape of fear itself.

For the brethren of monastic communities, this shape would have been entirely conventional and well-known to all, drummed in through rigorous discipline of mind and body. In this training, stories and pictures of dragons and of other, equally terrifying monsters were used not as we would today, to create a comfort zone of safety and security by consigning everything that might be frightening to the realms of make-believe, but to instil fear in novices, so that they might experience it, recognise its manifestations and – through a stern regime of mental and bodily exercise – overcome it. As the manifest form of a fundamental human feeling, the dragon was the palpable incarnation of what it meant to ‘know’ fear. Thus in medieval ontology, the dragon existed as fear exists, not as an exterior threat but as an affliction instilled at the core of the sufferer’s very being. As such, it was as real as his facial expression and the urgency in his voice. But unlike the latter, it could be neither seen nor heard save by the one who was himself afearful. That is why the monk’s rescuers saw no dragon themselves. They were most likely motivated by a feeling of compassion, which may for them – in the idiom of the time – have called to mind the image of a saintly figure, radiating light. Both saints and dragons, in the monastic imagination,

⁸ I am grateful to Godelieve Orye for this insight.

were concocted from fragments of text and pictures shown to novices in the course of their instruction. In that sense, to adopt the apt term of the historian Mary Carruthers, they were ‘figmented’.⁹ But these figments of the imagination, far from being cordoned off in a domain separate from that of ‘real life’, were for medieval thinkers the outward forms of embodied human experience, lived in the space of rupture between Heaven and Hell.

The monk of the story was of course torn between the two. Expelled from the monastery by the saintly Benedict, the devil – in the shape of the dragon – was waiting for him outside. Rescued in the nick of time, he was led back in. Thus the story unfolds along a path of movement, from inside to outside and then back inside again. From the very beginning, we are told, the mind of the monk was prone to wandering. Indeed in a puzzling twist at the end of his tale, Gregory recounts that for all that time, the monk was following the dragon *without actually seeing it*. What happened when he stepped outside was a complete loss of bearings, the kind of bodily disorientation that occurs when one is thrust into a totally unknown environment. It was as though the ground had been pulled away from under his feet. He panicked, and at that moment the dragon reared up before his eyes, blocking his path. He found he could no longer carry on. So in truth, the story concludes, Benedict did the monk a good turn by throwing him out, since it led him to see – and thus to know – the dragon that he had otherwise blindly followed. For writers in the monastic tradition, as the narrative brings out so clearly, knowing depended on seeing, and both proceeded along trajectories of movement. To understand what they meant we have to think of cognition, as Carruthers explains, ‘in terms of paths or “ways”’. The medieval thinker,

⁹ Carruthers, *The craft of thought*, page 187.

in a nutshell, was a wayfarer, who would travel in his mind from place to place, composing his thoughts as he went along.¹⁰

Dreams and reality

I shall return in due course to the question of wayfaring. In the meantime, let me introduce another example. Among the Ojibwa, indigenous hunters and trappers of the Canadian North, there is said to be a bird whose sound, as it swoops across the sky, is a peal of thunder. Few have seen it, and those who have are credited with exceptional powers of revelatory vision. One such, according the ethnographer A. Irving Hallowell, was a boy of about twelve years of age. During a severe thunderstorm, Hallowell recounts, the boy ran out of his tent and saw a strange bird lying on the rocks. He ran back to call his parents, but by the time they arrived the bird had disappeared. The boy was sure it was *pinési*, the Thunder Bird, but his elders were unconvinced. The matter was clinched, and the boy's account accepted, only when a man who had *dreamed* of the Bird verified the boy's description.¹¹ Clearly, *pinési* is no ordinary bird, just as the dragon is no ordinary reptile. Like the sound of thunder itself, the Thunder Bird makes its presence felt not as an object of the natural world but, more fundamentally, as a phenomenon of experience.¹² It is the incarnate form of a sound that reverberates through the atmosphere and overwhelms the consciousness of all who hear it. Just as the monk's brethren, as they rushed outside, saw no dragon, so the boy's parents did not themselves witness *pinési*. But as the conventional shape of a powerful auditory sensation, it would have been entirely familiar to them. The

¹⁰ Carruthers, op. cit., page 70. See also Tim Ingold, *Lines: a brief history* (London: Routledge, 2007), pages 15-16 and 95.

¹¹ The story is told in A. I. Hallowell, 'Ojibwa ontology, behavior and world view' (in *Culture in history: essays in honor of Paul Radin*, edited by S. Diamond, New York: Columbia University Press, 1960, pp. 19-52), page 32.

¹² On this distinction, see Tim Ingold, *The perception of the environment: essays on livelihood, dwelling and skill* (London: Routledge, 2000), pages 278-9.

Thunder Bird may be a figment of the imagination, but it is an imagination that has saturated the fullness of phenomenal experience.

Recall that the boy's observation, in this case, was confirmed by a dream. Bacon would have been mortified. For us moderns it is more usual, and certainly more acceptable, for dreams to be confirmed by observation. A well-known instance is the story of how the chemist Friedrich August Kekulé discovered the structure of the benzene molecule, comprised of a ring of six carbon atoms. According to Kekulé's own, admittedly retrospective and possibly embellished account – in a speech delivered during a celebration held in Berlin City Hall in 1890 to mark the twenty-fifth anniversary of his discovery – it happened one night in 1865, while he was staying in the Belgian city of Ghent. He had been up late in his study, at work on a textbook. Making little progress, he had turned his chair towards the fire and dozed off. In his reverie, atoms gambolled before his eyes, twining and twisting in snake-like motion.

But look! What was that? One of the snakes had seized hold of its own tail, and the form whirled mockingly before my eyes. As if by a flash of lightning I awoke; ... I spent the rest of the night in working out the consequences of the hypothesis.¹³

Whatever Kekulé might have felt at the moment of waking, we can be sure that once the flash that shook him from his slumber was extinguished, the gyrating serpent of his dream was no longer an affectation of vision but an abstract figure of thought – a snake 'good to think with' – that was peculiarly apt for deciphering the structure of a given reality. Thus the serpent and the benzene ring fall unequivocally on either side

¹³ An English translation of Kekulé's address by O. Theodore Benfey was published in 1958 ('August Kekulé and the birth of the structural theory of organic chemistry in 1858', *Journal of Chemical Education* 35[1]: 21-23). The quotation is from page 22. See also Royston M. Roberts, *Serendipity: accidental discoveries in science* (New York: Wiley 1989), pages 75-81.

of an impermeable ontological division between imagination and reality. It is this that allows the one to stand metaphorically for the other. The congruity between serpent and ring reinforces the division rather than breaking it down.

The dream-induced conjecture, however, is but a chimera until subjected to empirical test. It was in precisely this vein that Kekulé went on to advise his audience. ‘Let us learn to dream, gentlemen, then perhaps we shall find the truth... But let us beware of publishing our dreams till they have been tested by waking understanding’.¹⁴ Indeed, subsequent experimental work in the laboratory proved Kekulé’s hypothesis to be substantially correct, and it went on to become a cornerstone of the emerging field of organic chemistry. The dream itself, however, did not. In the harsh light of day, the dream vanished into oblivion. Thus science concedes to the imagination the power of conjecture – or, as we say, to think ‘outside the box’ – but only by banishing imagination from the very reality to which it affords insight. For the Ojibwa, by contrast, it would have been quite the other way around. For them, the truth of things is not only found but also tested by personal oneiric experience, which is why the boy’s sighting of *pinési* could be corroborated by his elder’s dream. In this quest for knowledge through experience, the powerful more-than-human beings that inhabit the Ojibwa cosmos, including Thunder Birds, are not analogical resources but vital interlocutors. This cosmos is polyglot, a medley of voices by which different beings, in their several tongues, announce their presence, make themselves felt, and have effects. To carry on your life as an Ojibwa person you have to tune into these voices, and to listen and respond to what they are telling you.

Another Thunder Bird story from Hallowell – admittedly one told to him by an informant – perfectly illustrates the point. Hallowell’s informant was sitting in a tent,

¹⁴ O. T. Benfey, loc. cit.

one stormy afternoon, with an old man and his wife. The thunder rolled and clapped. At once, the old man turned to his wife. ‘Did you hear what was said?’, he asked. ‘No’, came the reply, ‘I didn’t quite catch it’. Commenting on the exchange, Hallowell remarks that the old man ‘was reacting to this sound in the same way as he would respond to a human being whose words he did not understand’.¹⁵ This was not, however, a simple failure of translation. It was not as though the Thunder Bird had a message for the old man that he failed to grasp because of his imperfect command of Bird language. ‘By and large’, Hallowell observes, ‘the Ojibwa do not attune themselves to receiving messages every time a thunderstorm occurs’. It transpires that this particular man had, in his youth, become acquainted with the Thunder Bird through the dreams of his puberty fast, and had gone on to develop a close relationship of tutelage with *pinési*.¹⁶ In the context of this relationship, listening and responding to thunder was a matter not of translation but of empathy, of establishing a communion of feeling and affect or, in short, of opening oneself up to the being of another.¹⁷ And it is above all in dreaming, where the boundaries that surround the self in waking life are dissolved, that this opening up occurs.

Such exposure, however, was not something that a sober scientist like Kekulé could even contemplate. For him, the path to true knowledge lay not in opening up a dialogue with beings of the more-than-human world, but in an exact and literal reading of the facts already deposited there. The investigator who would ‘follow the paths of the Pathfinders’, Kekulé advised, ‘must note every footprint, every bent twig,

¹⁵ Hallowell, *op. cit.*, page 34.

¹⁶ This crucial qualification appears in one of Hallowell’s last papers on the Ojibwa, first published in 1966. See A. I. Hallowell, ‘The role of dreams in Ojibwa culture’ (in *Contributions to anthropology: selected papers of A. Irving Hallowell*, edited by R. D. Fogelson, F. Eggan, M. E. Spiro, G. W. Stocking, A. F. C. Wallace and W. E. Washburn, Chicago: University of Chicago Press, pp. 449-74), page 459.

¹⁷ I have discussed the distinction between translation and empathy, drawing on Hallowell’s example, in *The perception of the environment*, page 106. For an exploration of the significance of empathy within relations of tutelage, see Thorsten Gieser, ‘Embodiment, emotion and empathy: a phenomenological approach to apprenticeship learning’, *Anthropological Theory* 8(3): 299-318, 2008.

every fallen leaf. Then, standing at the extreme point reached by his predecessors, it will be easy for him to perceive where the foot of a further pioneer may find solid ground'.¹⁸ The object, as Bacon had put it, was to write a 'true vision of the footsteps of the Creator', inscribed in the works of His creation.¹⁹ It was a matter of unlocking the secrets of nature. For that you need a key or rather several keys, to unlock door after door. Kekulé's serpent offered one such key, in the figure of a ring. In his book *The Assayer*, dating from 1623, Galileo found his keys in the characters of mathematics, in the 'triangles, circles and other geometric figures' which comprise its special language. 'Philosophy is written in this grand book, the universe', wrote Galileo, 'which stands continually open to our gaze. But the book cannot be understood unless one first learns to comprehend the language and read the letters in which it is composed'.²⁰

Of words and works

The idea of the book of the universe, or of nature, is of considerable antiquity, and was as current among medieval scholars as it was subsequently to become in the rise of modern science. It rested, at root, on a homology between the *word* of God (*verbum Dei*), in the composition of the scriptures, and the *works* of God, in the creation of the world and its creatures. The question was: 'how could humans read those twin books?'²¹ With this, we can return to the monks of the medieval era, for whom – as I have already observed – the meditative practice of reading liturgical texts was a process of wayfaring. Over and over again, they would compare their texts to a

¹⁸ O. T. Benfey, op. cit., page 23.

¹⁹ Bacon, *The great instauration*, page 33.

²⁰ Galileo Galilei, *Discoveries and opinions of Galileo*, trans. Stillman Drake, Garden City, N.Y.: Doubleday Anchor, 1957, page 237.

²¹ James J. Bono, *The word of God and the languages of man: interpreting nature in early modern science and medicine* (Madison: University of Wisconsin Press, 1995), page 11.

terrain through which they would make their way like hunters on the trail, drawing on, or ‘pulling in’, the things they encountered, or the events to which they bore witness, along the paths they travelled. The word in Latin for this drawing or pulling in was *tractare*, from which is derived the English ‘treatise’ in the sense of a written composition. As they proceeded, the various personages whom they would meet on the way, and whose stories were inscribed on the pages, would speak to them, with words of wisdom and guidance, to which they would listen and from which they would learn. These were known as the *voces paginarum*, ‘voices of the pages’.²² Indeed, reading was itself a vocal practice: typically, monastic libraries were abuzz with the sounds of reading as the monks, murmuring the voices of the pages, would engage with them as though they were present and audible. To read, in its original medieval sense, was to be advised by these voices, or to take counsel, much as the old Ojibwa man would have been advised by the voice of his mentor the Thunder Bird – if only he had heard what it said!²³

Surrounded by the voices of the pages as the hunter is surrounded by the voices of the land, the medieval reader was a follower of tradition. In his encyclopaedic survey of animals in myth, legend and literature, Boria Sax points out that the word ‘tradition’ comes from ‘trade’, which originally meant ‘track’. ‘To study a tradition’, Sax writes, ‘is to track a creature, as though one were a hunter, back through time’.²⁴ Each creature *is* its story, its tradition, and to follow it is at once to perform an act of remembrance and to move on, in continuity with the values of the

²² See Dom Jean Leclercq, *The love of learning and the desire for God*, translated by C. Misrahi (New York: Fordham University Press, 1961) page 19; David R. Olson, *The world on paper: the conceptual and cognitive implications of writing and reading* (Cambridge: Cambridge University Press, 1994), pages 184-5; see Tim Ingold, *Lines*, pages 14-15.

²³ On the early medieval sense of reading, see Nicholas Howe, ‘The cultural construction of reading in Anglo-Saxon England’ (in *The ethnography of reading*, edited by J. Boyarin, Berkeley, CA: University of California Press, 1992).

²⁴ Boria Sax, *The mythical zoo: an encyclopaedia of animals in world myth, legend and literature* (Santa Barbara, CA: ABC-CLIO, 2001), page x. I am grateful to Maan Barua for bringing this work to my attention.

past. Often, the name of the creature is itself a condensed story, so that in its very utterance, the story is carried on. But it is carried on, too, in the calls or vocalisations of the creatures themselves – if they have a voice – as well as in their manifest, visible presence and activity.²⁵ As a node or knot in a skein of interwoven depictions, stories, calls, sightings and observations, none of which is ontologically prior to, or in any sense more ‘real’ than, any other, every creature – we could say – is not so much a living thing as the instantiation of a certain way of being alive, each of which, to the medieval mind, would open up a pathway to the experience of God. And so it was, too, with the letters and figures of the manuscript which, according to Isidore of Seville, writing in the seventh century, enable readers to hear again and retain in memory the voices of those not actually present.²⁶ Thus was the book of nature mirrored in the nature of the book: a second nature comprised not of works but of words.²⁷

For Isidore, reading should be done quietly, but it could not be altogether silent since it depended on gestures of the throat and mouth.²⁸ This was because, at that time, there were no spaces between the words of a manuscript. The only way to read, then, was to read *out*, following the line of letters much as one would follow a line of musical notation, allowing the words to emerge or ‘fall out’ from the performance itself. In the twelfth and early thirteenth centuries, however, there gradually came about a shift towards reading with the eyes alone, unaccompanied by voice or gesture. What made this possible was the division of the line of text into

²⁵ I have discussed the ways in which the naming and vocalisations of animals enact their own stories in my essay ‘Naming as storytelling: speaking of animals among the Koyukon of Akaska’, in Tim Ingold, *Being alive: essays on movement, knowledge and description* (London: Routledge, 2011), pages 165-175.

²⁶ Mary Carruthers, *The book of memory: a study of memory in medieval culture* (Cambridge: Cambridge University Press, 1990), page 106.

²⁷ Forrest Clingerman, ‘Reading the book of nature: a hermeneutical account of nature for philosophical theology’, *Worldviews: Global Religions, Culture, Ecology* 13(1): 72-91, 2009.

²⁸ Paul Saenger, ‘Silent reading: its impact on late medieval script and society’, *Viator* 13: 367-414, 1982, page 384.

word-length segments, each of which could be taken in at a glance, with spaces in between. The medievalist and palaeographer Paul Saenger has shown how, with such visual reading, the voices of the pages were effectively silenced.²⁹ As long as everyone in a monastic library was reading aloud, the sound of one's own voice would have sufficed to screen out the voices of others. But as every modern student knows, when one is trying to read silently, the slightest sound can be a source of distraction. So it was that silence came to reign within the cloistered confines of the monastery. In the world outside the monastery, however, in lay society, oral reading continued to predominate well into the fourteenth and fifteenth centuries. As the historian of cognition David Olson has pointed out, it was the Reformation that heralded the key transition in ways of reading, from reading *between* the lines to reading what was *on* them, or from the search for revelations or 'epiphanies' to the discovery of the one literal meaning lodged in the text, and available to anyone with the necessary key to extract it.³⁰

Reading the new book of nature

In the early sixteenth century, Martin Luther urged readers to abandon the dreams and fantasies that their predecessors had found in their attunements to voices that they felt were speaking to them through the pages of the manuscript, and to draw a line in the sand between the given meanings of words and their subsequent interpretations.³¹ And from there it was but a short step to extend the same reasoning from words to works, that is, to the reading of the book of nature. Thus did Bacon, a century later, insist on an absolute distinction between dreams of the imagination and patterns of the world. I would like to draw attention, in particular, to three corollaries of this transition in

²⁹ Saenger, *op. cit.*, pages 378, 397.

³⁰ Olson, *The world on paper*, pages 143-4.

³¹ Olson, *op. cit.*, pages 153-4.

ways of reading the natural world. The first has to do with the imagination of what is yet to come. Reading the voices of nature, of the more-than-human world, medieval people were advised by them, and would follow this advice, in parallel with their own experience, in laying a path into the future. With a sensibility attuned by an intimate perceptual engagement with their surroundings, they could *tell*, not only of what has been, but also of what will come to pass. But such foretelling, as Olson shows, has to be clearly distinguished from the kind of prediction to which a scientific reading of the book of nature aspires.³² For to predict is not to open up a path through the world but to fix an end-point in advance. Where foretelling is guided by a dialogue with nature, prediction extrapolates from observable facts. Drawing on these facts, it is to speculate *about* the future rather than to see *into* it.

The second corollary concerns performance. I have shown how for medieval readers, meaning was generated in the vocal-gestural activity of reading *out*. Doing and knowing, here, were as clearly coupled as chewing and digestion – an analogy explicitly drawn in the ancient characterisation of thinking as a process of rumination. To ruminate, we still say, is to chew things over – as cattle chew the cud – and to digest their meanings.³³ Moreover medieval people, as we have seen, would have read the book of nature in the same manner, through their practices of wayfaring. Thus, knowledge of nature was forged in movement, in the course of going about in it. This knowledge was performative in the strict sense that it was *formed through* the comings and goings of inhabitants. Reading as performance, in short, was both word-forming and world-forming. As the case of the Ojibwa and the Thunder Bird clearly demonstrates, in a way of knowing that is performative – that *goes along* – any boundaries between self and other or between mind and world, far from being set in

³² Olson, *op. cit.*, pages 174-5.

³³ Carruthers, *The book of memory*, pages 164-5; see Ingold, *Lines*, page 17.

stone, are provisional and fundamentally insecure. In a science constructed in the spirit of Bacon, however, to know is no longer to join *with* the world in performance but to be informed *by* what is already set down there. Rather than seeking to follow the trails of a familiar terrain that is continually unfolding, the scientist sets out to map a *terra incognita* that is ready made – that is to discover, through some process of decoding or deciphering, what exists in fact. The book of nature having been *in-*scribed by the Creator in the language of things, the task of the scientist – for Bacon, as indeed for Galileo – was to *de-in-*scribe, or in a word, to ‘describe’ what was written there.³⁴ This is to obtain knowledge not by reading *out* but by reading *off*. And from the moment when reading out gave way to reading off, the world ceased to offer counsel or advice and became instead a repository of data that, in themselves, afforded no guidance on what should be done with them. The facts are one thing, values quite another, and the latter had their source not in nature but in human society. Thenceforth, wisdom took second place to information.

The third corollary takes us back to the idea that animals and other beings of the more-than-human world were known in medieval times by their traditions, as skeins of stories, depictions and observations. To track an animal in the book of nature was like following a line of text. But just as the introduction of word-spacing broke the line into segments, so also – in the book of nature – creatures began to appear as discrete, bounded entities rather than as ever-extending lines of becoming. Nature thus became amenable to the project not of trail-following but of classification. The lines were broken, but the resulting objects could be sorted and arranged, on the basis of perceived likeness or difference, into the compartments of a taxonomy. One could speak, for the first time, of the building blocks of nature, rather than its weave,

³⁴ On Bacon and the ‘new *de-in-scriptive* hermeneutics of nature’, see Bono, *The word of God and the languages of man*, page 244.

and of its architectonics. Nature, in short, was perceived to be built up from elements rather than woven from lines. And the creatures of this natural world were no longer known as traditions but as species. Those creatures, however, that were known *only* by their traditions, and for which no corroborating evidence could be found in the facts of nature, fell through the cracks. There are no dragons or Thunder Birds in scientific taxonomies. It is not just that they *do not* exist in the new book of nature; they *cannot*, since their story-bound constitution is fundamentally at odds with the project of classification. Dragons, along with other beings that rear up or make their presence felt along the ways of the world, can be told but they cannot be categorised. Nor, of course, can they be precisely located, as on a cartographic map. Just as they fell through the cracks of taxonomy, so also they were ‘pushed into the wings’, as Michel de Certeau put it, of a scientific cartography that had no place for the movements and itineraries of life.³⁵ The same, of course, is true of experiences of fear, and of the sounds of thunder. They, too, can be neither classified nor mapped. But this does not make them any less real for a person who is frightened or caught in the eye of a storm.

Science and silence

It seems, then, that as the pages lost their voice with the onset of the modern era, so the book of nature was also silenced. No longer does it speak to us, or tell us things. And yet this allegedly silent nature can be, and often is, a deafeningly noisy place. As philosopher Stephen Vogel observes,³⁶ the world of nature abounds in movement and gesture, and much of this movement is manifested as sound: think of the clap of thunder and the howling of the wind, the cracking of ice and the roar of the waterfall,

³⁵ Michel de Certeau, *The practice of everyday life*, translated by S. Rendall (Berkeley, CA: University of California Press, 1984), pages 120-1.

³⁶ Stephen Vogel, ‘The silence of nature’, *Environmental Values* 15(2): 145-71, 2006.

the rustling of trees and the calls of birds. We may also admit that at one level, human talk may also be understood as vocal gesture, and that the voice manifests human presence in the world just as the call manifests the presence of the bird and the clap the presence of thunder. On this level, voice, call and thunder are ontologically equivalent: as the voice *is* human being in its sonic manifestation, so the call *is* the bird and the clap *is* thunder. Yet none of this, Vogel maintains, warrants the conclusion that natural entities actually *converse* with human beings, let alone with one another. This is for two principal reasons. Firstly, conversation requires participants to attend and respond, in turn, to one another. Humans do indeed attend and respond to the sounds of nature: they listen out for bird-calls and are moved, even terrified, by thunder. But does nature, Vogel asks, respond to us? ‘Do the self-speaking entities we attend and respond to in nature ever give us their full attention ..., engage us, respond to our claims?’³⁷ The answer, he is convinced, is ‘no’. The sounds of nature, he suggests, are more like the commands of a monarch who is deaf to his subjects but compels their obedience. Secondly, a conversation is necessarily *about* something.³⁸ It enables participants to compare each other’s perceptions of the world in the common task of figuring out how it actually *is*. Human interlocutors do this, but birds, trees, rivers, thunder and the winds do not. It is not that they are irresponsible interlocutors; rather, they are not interlocutors at all.³⁹

For Vogel, then, the silence of nature means that however much noise it makes, it takes no part in the conversations we hold about it. It might sound to us *as if* nature is speaking, but that is a delusion. ‘I have listened carefully’, writes Vogel, ‘and I hear nothing’.⁴⁰ Recall the old Ojibwa man and the Thunder Bird. He thought

³⁷ Vogel, op. cit., page 148.

³⁸ Vogel, op. cit., pages 151-2.

³⁹ Vogel, op. cit., page 157.

⁴⁰ Vogel, op. cit., page 167.

the thunder was speaking to him, but could not comprehend what it said. Was this a failure of translation, as Hallowell seems to suggest? I have argued that it was rather a failure of empathy. For Vogel, however, had the old man comprehended thunder's speech, he would have succeeded neither in translating it nor in empathising with it. He would rather have performed an act of ventriloquism. For whereas the translator speaks for another but in his own tongue, the ventriloquist projects his own words onto a mute object while creating the illusion that it is the object speaking for itself.⁴¹ This charge of ventriloquism is of course the foundation for the scientific abhorrence of anthropomorphism, where those who claim empathy with non-human creatures, or to know what they are feeling, stand accused of merely projecting their own thoughts and sentiments onto their unwitting subjects. It is an accusation, however, that has not gone unchallenged. In an important debate conducted in the pages of the journal *Environmental Values*, Nicole Klenk has entered on the other side. She replies that non-humans *can and do* respond to human voice, gesture and presence in ways that are meaningful both to them and to us.⁴²

It is true that non-humans may not compare their perceptions of the environment with humans in a collaborative effort to establish the truth of what is actually 'out there'. But to insist that conversations can only take this form, Klenk argues, is to take such a narrow view of conversation that it would exclude most of what we commonly call conversation in the human world. For most people, most of the time, conversation is a matter of understanding what others are telling us – of 'getting the story right', not of verifying the rightness of the story.⁴³ Thus human beings who take it upon themselves to render in words what nature is saying are

⁴¹ Vogel, op. cit., page 162.

⁴² Nicole Klenk, 'Listening to the birds: a pragmatic proposal for forestry', *Environmental Values* 17(3): 331-51, 2008.

⁴³ Klenk, op. cit., page 333.

indeed translators and not ventriloquists. For Klenk, this is precisely what happens in scientific work. Were this not the case, she concludes, scientific interpretations would be mere fictions created through dialogue among humans, rather than the results of careful interaction with – and observation of – components of the natural world. But in this, I believe Klenk is mistaken. Or more to the point, she is mistaken so long as we remain bound by the methodological protocols of normal science. For the claim of science is that as a specialised knowledge practice, its *does* seek to verify the rightness of the story, rather than merely getting the story right. Ever since Bacon, science has insisted on discovering the literal truth of what is there, and thus on the strict separation of fact and interpretation. Reading what is *on* the lines of the book of nature, rather than between them, the one thing that scientists insist they do *not* do is what Klenk takes to be their number one priority: ‘to listen to the voices of those beings they interact with’.⁴⁴ Arguably, indeed, scientists do all they can to *avoid* listening, for fear that it would interfere with or compromise the objectivity of their results.

Knowing in being

So there is, I contend, a real parallel in the modern constitution between the book of nature and the nature of the book, as a completed work whose contents can be read by those with the keys to decipher it. The parallel lies in the idea that both are to be read in silence: not in the course of an ongoing conversation whose manifold participants open up to one another and whose stories intertwine, but as a record of results that – rendered inert and impassive, in objective and objectified forms – have turned their

⁴⁴ Klenk, *op. cit.*, page 334. The exception to this are advocates of Goethean science for whom to engage in scientific study is to ‘enter into a conversation with nature [and] listen to what nature has to say’ (Craig Holdrege, ‘Doing Goethean science’, *Janus Head* 8(1): 27-52, 2005). The contempt in which the Goethean approach is held by mainstream science reveals it, however, to be an exception that proves the rule.

back on us, presenting to our inspection only what Mae-Wan Ho has called an ‘opaque, flat, frozen surface of literalness’.⁴⁵ To science, the facts are given; they comprise what are called the ‘data’. But the world does not ostensibly give of itself to science as part of any offering or commitment. What is ‘given’, in science, is precisely that which has fallen out of circulation and has settled as a kind of residue, cast off from the give and take of life. It is this residue – dredged, sampled and purified – that is then subjected to a process of analysis, the end-results of which appear on the written page in the forms of words, figures and diagrams. Thus the knowledge so constituted is created as an overlay or wrap-around, on the outside of being. Having silenced the world, we find knowledge in the silence of the book. Indeed the very concept of the human, in its modern incarnation, expresses the dilemma of a creature that can know the world of which it is existentially a part only by leaving it. Yet in our experience as inhabitants, moving through the world rather than roaming its outer surface, our knowledge is not built up as an external accretion but rather grows and unfolds from the very inside of our earthly being. We grow into the world, as the world grows in us. Perhaps this grounding of knowing in being lies at the heart of the kind of sensibility we are apt to call ‘religious’.

But was it not in the name of religion that leaders of the Reformation insisted on turning the relation between knowing and being inside out? In its stress on the literal truth of words and works, the religion of the reformists was trumped by the very science it unloosed. For in any contest over the facts, science is bound to win, and religion to lose, leaving the puzzle of why people – including, it must be said, many scientists – tenaciously adhere to representations of reality that are

⁴⁵ Mae-Wan Ho, ‘The role of action in evolution: evolution by process and the ecological approach to perception’, *Cultural Dynamics* 4(3): 336-54, 1991, page 348.

demonstrably false.⁴⁶ Yet questions about which can better *represent* the world, religion or science, are wrongly posed, for the real contest lies elsewhere. It turns on the question of whether or not our ways of knowing and imagining are enshrined within an existential commitment to the world in which we find ourselves. To compare religion and science in terms of their respective purchase on a reality from which we ourselves are fully disengaged is to assume that they are not – in other words, that in our conscious deliberations, whether scientific or spiritual, the world owes nothing to us, nor we to the world. But if, on the other hand, we owe our very existence to the world, and if the world, at least in some measure, owes its existence to us, then we need to ask instead: what is the nature of these owings, these commitments? How can knowing and imagining let us, and the creatures around us, *be*? For it is surely in their discharge into being – that is in the recognition, as anthropologist Stuart McLean puts it, of an essential continuity between ‘human acts of imagining’ and ‘the processes shaping and transforming the material universe’ – that the common ground between religion and science is to be found.⁴⁷

This is where Klenk might be right after all. All science depends on observation, and observation depends in turn on a close and immediate coupling, in perception and action, between the observer and those aspects of the world that are the focus of attention.⁴⁸ Perhaps the most striking characteristic of modern science lies in the lengths to which it has gone to deny or cover up the practical, observational commitments on which it depends. To highlight these commitments – to attend to the

⁴⁶ There is an ever-growing literature devoted to this puzzle, which frames the problem in exactly these terms: why is the human imagination primed to come up with representations of entities, such as spirits, which – if they existed in fact – would violate obvious principles of physical or biological causation? See, for example, Pascal Boyer, ‘Functional origins of religious concepts: ontological and strategic selection in evolved minds’, *Journal of the Royal Anthropological Institute* 6(2): 195-214, 2000. From the perspective advanced here, this literature, which treats religion as a domain of cognitive illusion, completely misses the point.

⁴⁷ Stuart McLean, ‘Stories and cosmogonies: imagining creativity beyond “nature” and “culture”’, *Cultural Anthropology* 24(2): 213-245, 2009.

⁴⁸ Ingold, *Being Alive*, page 75.

practices of science rather than its formal prescriptions – means recovering those very experiential and performative engagements which, unwritten and unsung, have fallen through the cracks or been pushed into the wings of scientific conceptualisations. Let us not forget the advice of August Kekulé, that to ‘follow the paths of the Pathfinders [one] must note every footprint, every bent twig, every fallen leaf’. Scientists in practice are as much wayfarers as are people of faith, and must perforce tread where others have gone before, ever attentive and responsive to the rustlings and whisperings of their surroundings. Joining with things in the processes of their formation, rather than merely being informed by what has already precipitated out, practising scientists do not just *collect* but *accept* what the world has to offer them. They may, in deference to official protocols, feign not to listen to the voices of beings around them, but listen they must, if they are to advance beyond the bare pick-up of information towards real understanding. Like it or not, they too are beholden to the world. And it is in this more humble profession, rather than in arrogating to itself the exclusive authority to represent a given reality, that scientific inquiry converges with religious sensibility as a way of knowing-in-being. This is the way of imagination.

The Bible and the land

Let me conclude with one further example from the ethnography of the circumpolar North. It comes from a recent study by Peter Loovers, carried out among Teetl’it Gwich’in people living in and around Fort McPherson, in the Northwest Territories of Canada.⁴⁹ The study is exceptional in combining a sensitive account of the ways in which people relate to their environment as they hunt, trap and move around on land

⁴⁹ Jan Peter Laurens Loovers, ‘*You have to live it’: pedagogy and literacy with Teetl’it Gwich’in*, unpublished PhD thesis, University of Aberdeen, 2010. It was my privilege to supervise Peter’s work, alongside my colleague David Anderson, and it was my experience of helping him pull together the sections of his thesis on literacy and living on the land that first planted the idea for this lecture in my mind.

and water, with a detailed history of Gwich'in engagements with the written word – above all in the translation and reception of the Christian Bible. The immense work of translation was undertaken by Archdeacon Robert McDonald. Born in 1829 of a Scottish father – an employee of the Hudson's Bay Company – and an Ojibwa mother, McDonald was educated at the Anglican mission school at the Red River settlement and spent a decade serving with the Ojibwa people before embarking, in 1862, on a mission to bring the Anglican faith to the people of the Mackenzie River district. Over the ensuing decades, McDonald worked tirelessly to introduce Christian teachings to native Gwich'in communities and many of the men and women whom he encountered on his travels became key advisers in helping him to transcribe liturgical texts into their own language, known at the time as Taduḵ. For McDonald, the translation of the entire Bible into Taduḵ was a lifelong endeavour, and the work was not completed until 1898.

Though the Taduḵ Bible was warmly received by the Gwich'in, this reception was not quite as McDonald intended. Unlike his rivals from the Catholic mission, who took a rather more relaxed attitude, McDonald was steeped in the traditions of the reformed church, and believed that the text of the Bible was to be read literally, as the unalterable record of a singular truth that is not open to negotiation. Much to his discomfort, however, many Gwich'in people, including several of McDonald's own pupils, began to experience dreams and visions in which, it seemed, the pages of the Bible were talking to them, issuing instructions and revealing prophecies. These pages spoke with the voices of their elders, the people with whom McDonald had been working in transcribing the text (and whose particular dialectal idiosyncrasies had become incorporated into it), and even with the voice of McDonald himself. Thus for the Gwich'in, to read the Bible was to open up a

conversation with these elders, to listen to their voices, to be taught by them, and to learn. For his part, McDonald was mightily displeased, and felt compelled to denounce the ‘false prophecies’ that were being mouthed by the people.⁵⁰ The mismatch between these ways of reading was not, however, confined to the Bible. It has continued to surface in other contexts, most notably in the interpretation of treaties and land claims agreements drawn up with officials of the Canadian government. In these cases the dismay was on the side of the Gwich’in, who were surprised to discover that documents which they had thought to open up to ongoing dialogue with those whose voices were incorporated therein, were treated by officialdom as set in stone, silent and unyielding.⁵¹

Exactly the same mismatch, as Loovers elegantly shows, can be found in ways of reading the land. For colonisers, explorers, scientists and others who have come to the land from outside, whether on a mission to civilise it, to develop it, to research it or to appreciate its natural beauty, there is no disputing that what is there is already fixed, awaiting discovery, explanation and possibly transformation by the hands and minds of men. For the Gwich’in, however, it is quite different. To read the land, for them, is to attend to the multiple clues that reveal the activities and intentions of its manifold human and more-than-human inhabitants. These clues, Loovers tells us, ‘include animal movements, trails, old and new camps and cabins, marks on the land, wood, snow and ice conditions in winter, river-banks in summer, and places where events have unfolded’.⁵² Wherever they go, Gwich’in are listening, remembering, learning, *taking counsel* from the land. It is their teacher, not just a repository from which can be extracted materials for the construction of propositional knowledge. Thus the land speaks to people with many voices, just as the Bible does. Should we

⁵⁰ Loovers, op. cit., page 117.

⁵¹ Loovers, op. cit., page 138.

⁵² Loovers, op. cit., page 300.

then go along with Archdeacon McDonald and conclude that such a way of reading the land is equally false, or that it rests on the kinds of delusions to which in western colonial eyes, allegedly primitive, native peoples have always been supposed to be prone? Even McDonald, with his Ojibwa upbringing, would have known that there is more to indigenous understandings than this. And so, in light of what I have argued in this lecture, do we.

Epilogue

There's no such thing as a dragon. That's the title of one of the great classics of children's literature, authored by Jack Kent.⁵³ It tells the story of a little boy, Billy Bixbee, who wakes one morning to find a dragon in his bedroom. It is pretty small, and wags its tail in a friendly way. Billy takes the dragon down to breakfast, and introduces it to his mother. 'There's no such thing as a dragon', she declares firmly, and carries on preparing pancakes for breakfast. Billy sits at the breakfast table; the dragon sits *on* it. Sitting on the table is not normally permitted in the Bixbee household, but there was nothing to be done, since if a dragon does not exist, you can't tell it to get down from the table. The dragon is hungry and eats most of the pancakes, though Billy doesn't mind. As his mother continues to ignore the new arrival, the dragon begins to swell. It swells and swells. Soon it occupies most of the hallway, and Billy's mother has difficulties cleaning the house as she can only get from one room to another by way of the windows. All the doors are blocked. The dragon swells and swells – now it is as big as the whole house. Then the house is lifted off its foundations and careers off down the street on the dragon's back. Billy's father, home from work, is surprised to find that his house has vanished. But a helpful

⁵³ Jack Kent, *There's no such thing as a dragon* (New York: Random House Children's Books, 2009).

neighbour points in the direction it went. Eventually the family is reunited, and by this time Billy's mother has reluctantly acknowledged that perhaps the dragon does exist after all. Immediately, the dragon begins to shrink, until it is once again of a manageable size. 'I don't mind dragons when they're this size', Mrs Bixbee admits, as she sits comfortably in an armchair giving the dragon a good stroke.

The moral of this story, of course, is that initially small problems – if we are afraid to recognise them or to speak their name, for fear of infringing the norms of rational conduct – can grow and grow to the point at which ordinary social life can no longer be sustained. I think, in the present day, that there is a dragon in our midst, and that it is growing to the point at which it is becoming increasingly difficult to lead sustainable lives. This dragon inhabits the rupture we have created between the world and our imagination of it. We know from experience that the rupture is unsustainable, and yet we are reluctant to acknowledge its existence since to do so would fly in the face of accepted scientific rationality. I believe such acknowledgement is long overdue. In this lecture I have suggested how studies of medieval monasticism and of so-called indigenous ontologies could suggest alternative ways of reading, and of writing, which might allow us once again to take counsel from both the voices of the pages and the world around us, to listen and be advised by what they are telling us, and to heal the rupture between being and knowing. This healing must be a first step towards establishing a more open-ended and sustainable way to live. Perhaps, then, the dragon will subside.