

Science, History and the Sublime

Andrew Shryock and Daniel Lord Smail, in their recent collaboration on *Deep History* make the rather startling observation that whilst the depth of history has extended in response to *On the Origin of the Species* (1859) and geological time charts developed in the 19th century, and current cosmological conceptions of deep time extending back some 13.4 billion years, the discipline of history has become increasingly restricted to the recent past. Indeed as they point out judging by university course offerings, professorial titles and publications, the extent of history today is gradually retracting into the near present. More or less coinciding with the date of its own foundation as a discrete university subject it appears as if history has become bounded by its own disciplinary origins. One cause of this, they point out, is that the new discipline of history founded less than two centuries ago insisted that historical truth can only be confirmed by documentary evidence, and this has of course provided a methodological boundary to its domain. One of the many consequences of this (which may or may not be intentional) is that History can conceal its own novelty as a way of knowing the world, and “New Historians” such as Gallaher and Greenblatt challenged this myopia with the understanding that any story of the past is partial, provisional and a tale told from the present. The transformational resonance of “New History” is beginning to be felt on other disciplines, so that, for example it no longer appears as if the hard sciences have been with us for ‘ever’, and that the history of science - even when it is not articulated by scientists - impacts on their practice. However, undergraduate scientists are encouraged to review the scientific literature of the past but are not routinely taught the history of science, or that the history of science - how science was practised, how its claims were received and how (and why) dominant assumptions have been overturned - is important. In many ways a science, inextricably linked to the technological promise of unrestrained progress is none the worse for its healthy neglect of partial and provisional accounts of its past. But as the myth of technological autonomy that prevailed in the 19th and 20th centuries has given way to a more pragmatic, semiotic and socially determined view of technology as an imaginary dimension located in human desire and aspiration. This imaginary is frequently manifest in technological artefacts and systems and in this way the history

of science connects with *Deep History* in that it is imbricated in a story of the progressive depth of human consciousness.

The archaeology of modern science reveals it to be certainly much younger than many of the arts that were used to understand the world; music, painting, literature, theatre etc, and it is well documented that in the 17th and 18th centuries (what we now call) scientists had to struggle against resistance and scepticism to achieve their current standing. Such struggles were not convincingly won even throughout the 19th century until, according to Richard Luckhurst’s account of the separation of science from psychical research, the human origin of science was detached as a legitimate area of concern and with it was swept away the enterprise of history. It is here that *Deep History* with its concern with the concept of origins may rescue science from its progressively alien appearance (which, in my view, no amount of dating the arts will ever recover).

In the previous century science was not always so detached from the philosophical conundrums of conscience. There was a time, not so long ago when it was thought by rational and informed scholars that the universe ‘started’ between 4,000 and 6,000 yrs BC. This belief became increasingly difficult to sustain if the scientific evidence of geology was taken as face value. (Edmund Goss and others, of course devised brilliantly inventive explanations to counter the geological record and maintain the short history of the world). Elsewhere, however, the geological evidence revealed an infinitely deep history of activity and organisms; not least ‘pre-Edenic’ man. These scientific claims of a deep time before Adam, and the wider acceptance of geological time - and its integration with the human imaginary of kinship for example - poses a key question that form the cornerstone of Smail’s project: when does history start? Is it exclusively a study of humans and if so when do we start the story in time and where do we start it in space? If we take the view that history starts with Hominines who have agency over contingency then we need also to consider where that agency lies and if it is historical then what is the history of consciousness? These are not purely historiographical questions. Speaking of the practice of history and its implications for its practitioners Shryock and Smail point out: “The small community of inquiry created in the Spring of 1859 was composed of materials, things, and flesh and blood people. It made novel connections between places as varied as muddy gravel pits and the metropolitan meeting rooms of learned

societies. The biface [axe], and the networks of relationships emanated from it, certainly affected the lives of its discoverers and all those who have subsequently come into contact with it.

Hominines have always been constituted by the agency of persons and things. Our history is a material history, not just a succession of thoughts and speech acts. If deep time is to figure in our histories, then we need narratives that can triangulate between agents and materials. This shift in focus brings into play a model of cognition that differs from the one that underpinned the deep-time revolution of 1859, [On the origin of Species] which stressed a rational appreciation of the evidence rather than a relational understanding. A mind distributed in social relationships and physical materials takes cognition outside of the head, beyond the skin, and into the world. Such externalism means that materials and artefacts are always implicated in our cognitive architecture rather than being simply outputs of our internal cognitive processes. Thinking through objects rather than thinking about objects becomes the description of the cognitive processes (Shryock and Smail, 2012, pp. 30-31).

In short, Deep History suggests that in any cognitive enterprise in which we are thinking through objects, we are intimately connected with ourselves as an intimate determinant of that object - irrespective of its place in time. This 'bootstrapping' version of reality, which recognises the human imaginary as mobile, provisional and contingent, presents something of a paradigm conflict with those rationalist enquiries that are driven by a positivist world-view and insist on maintaining a verifiable distance between the observer and the observed (subject and object). This tension lies at the heart of the definition of science that Sundar Sarukkai so ably unravels in his recent book *What is Science?* To track the detachment of the term science from natural philosophy is also to track the detachment of what it means to do science from what it means to believe. As he reminds us:

Given that the title of science has value in the present times, it is only reasonable to expect spurious claims to science hood. Centuries ago, in the beginning of modern science, it was religion or philosophy that had this value and physicists and mathematicians often invoked the idea of God or of Religion to validate their work. ... Now the roles are reversed and religion often, tries to legitimize itself by saying its claims are scientific or that what religion talks about has some cor-

relation with modern science (Sarukkai, 2012, pp. 11-12).

In this progressive reversal there is also a detachment from one of the key drivers of human intervention, at least as evidenced in the arts, which is a fascination with the infinite unknown, which finds its highest expression in the idea of beauty - the sublime. At the mid-point in the timeline between European Enlightenment and the present-day, the greatest and most fundamental and formative insights of physics emerged from a hybrid of validation between the rational and belief. Key figures in the chronology of science such as Davy and Faraday, were committed scientists who also had strong spiritual convictions that have, by and large, been erased as inconvenient distractions. But as Richard Luckhurst's painstaking research has made clear, the distinction between scientific and psychical research - at least in Britain - was not especially marked until the latter part of the 19th century. The mutual interaction of the material (and rational) and the unknown and sublime was crucial to the scientific imaginary and, despite the interdictions of the establishment, persisted through figures such as William Crookes and Oliver Lodge. I have argued elsewhere, this occult dimension of enquiry precipitated a technological strand that deployed science in the possibility of infinite connection in time and space (largely through audio visual media). The preoccupation of mainstream scientists and technologists with the arts and media might be viewed, in this context, more as a latent desire to engage with that which it lost (the sublime imaginary) rather than a patronising attempt at public education.

There is some indication that from within scientific practice there is a widening consideration of the agenda that has, for the most part, been consigned to visionaries such as Feynman and media niches such as *Leonardo*. Hoffmann and Boyd Whyte have recently put the sublime into the frame again as a reinstatement of belief, and done it in such a way so as to avoid the polemic that sprang from Darwin's *On the Origin of Species*. Introducing their collection of essays they argue for a symptomatic approach to the question of belief and science.

The breadth and indeterminacy of the term [sublime] are central to this project. Rather than address the sublime head on as a category seeking definition, this volume uses it as a catalyst to provoke responses from a group of distinguished scientists and cultural historians. ... In this con-

text, the sublime is not offered either as a veiled religiosity or as a mandate for nihilism. Rather, it is seen as a means of defying conceptual rules and, in the process relating insights that were formerly unknown to each other (Hoffmann & Whyte, 2011, p. viii).

Their approach is transdisciplinary in its broad aims and to be welcomed, but its flaws are in its (possibly well intentioned) multidisciplinary method. Science and belief are aspects of human endeavour that are too important to be left to the dictatorial rehearsals of binary oppositions or a liberal consensus based on a democracy of opinion and views. And whilst it is important to contextualise any practice in a cultural history, as Shryock and Smail propose, it is through historiography (not history) that the sublime can emerge as a human symptom. As many of us have argued before, it is important that scientists engage with the history of science as an essential part of their training in order to situate their practice as also partial, provisional and a story told from the present. To understand that good science (and good scientists) should recognise the interdependence of the inextricable connection with ourselves as an intimate determinant of the object of knowledge. With the advantage of Shryock and Smail's brilliantly accessible work, the consideration of deep time and Deep History makes it clear that to do science and to do history is to think through objects rather than about objects. To factor this into the practice of science will lead to the recognition that the 'self' that undertakes scientific research cannot be fully defined in scientific ways. Such a modest world view opens up a meaningful transdisciplinary framework for the arts, humanities, science and technology to liberate shared human dimensions - such as the sublime - and return a real dividend on the intellectual generosity required for such collaboration.

References

- Burke, E. ([1756] 1999) *The Sublime and the Beautiful*. London: Penguin.
- Hoffmann, R. and Boyd Whyte, I. (eds.) (2011) *Beyond the Finite: The Sublime in Art and Science*. Oxford: Oxford University Press.
- Holmes, R. (2009) *The Age of Wonder: How the Romantic Generation Discovered the Beauty and Terror of Science*. London: Pantheon Books.
- Luckhurst, R. (2009) *The Invention of Telepathy*. Oxford: Oxford University Press.
- Sarukkai, S. (2012) *What is Science?* New Delhi: National Book Trust.
- Shryock, A. and Smail, D. (2011) *Deep History:*

The Architecture of the Past and Present. Berkeley: University of California Press.

Smail, D. (2010) *On Deep History and the Brain*. Berkeley: University of California Press.