CHANGING TECHNOLOGY, PRACTICE, AND VALUES: WHAT IS THE FUTURE OF INDUSTRIAL ARCHAEOLOGY?

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‘If an archaeologist turns up at your workplace, you know that your industry is in trouble’. A joke I once heard. It’s a joke that resonates with the decline of heavy manufacturing in the UK since the 1980s. After all, archaeologists study old, dead things – right? Entering the US on my way to the symposium, the airport official who checked my passport asked what my business was in Puerto Rico. ‘I’m an archaeologist. I’m going to San Juan to present a paper’, I replied. ‘Dinosaurs?’, he asked. ‘No, that’s palaeontology’, I replied. ‘Mummies?’, he asked. ‘No, that’s Egyptology’. He waved me through. If the conversation had continued, I would have told him that I am a post-industrial archaeologist. I study the materiality of closure and transition: the afterlives or ‘reanimation’ of industrial sites, including the continuing dynamics of industrial landscape, their future potential reuse and ongoing relationship with local communities (Orange 2012, 2014). I also study how that relationship connects with changing regional and national policies in the UK during the post-war period.

INDUSTRY IN FLUX

My interest in industry and deindustrialisation stems from my childhood growing up in the English Midlands. My family worked in light engineering, in foundries and jewellery workshops. Conversations at family gatherings often turned to work. As aunts, uncles, parents and grandparents exchanged memories, they talked of demolished factories, adapted buildings, new industries, old industries and people they knew, but I didn’t. Years later, while I was at university in Leicestershire in the late 1980s, I witnessed the deindustrialisation of the coalfield communities of the East Midlands. I learned early on that industry is in constant flux and that industrial communities can undergo rapid economic and social change. I also learned that individual hopes and fears run through each contraction and expansion. Industry for me is as much about people and communities as it is about the materiality of the archaeological remains.

Industrial archaeology can, of course, be approached at larger scales, aside from the individual, familial or communal. In the United Kingdom, industry was once an integral part of regional and national economy and identity. Cornwall was tin, fish and farming. The north-east was coal, steel and ships. Wales was coal. On a global scale, the Anthropocene – a proposed geological epoch marking the impact of human activity on the earth’s ecosystems – is currently being debated by geologists (Crutzen 2002). The start of the Industrial Revolution has been proposed as a starting point for the Anthropocene. Edgeworth, however, has suggested that geological timescales are best viewed with considerable hindsight, from the perspective of ‘…tens of thousands, hundreds of thousands or even millions of years in the future’ (Edgeworth 2010). It is sobering to consider that it might take that long to gain useful perspective on the impact of industrialisation.

I freely admit to spending time contemplat-
ing future archaeology, just not that far into the future. This short article has provided an opportunity to dabble in some crystal ball-gazing, but first, with the benefit of hindsight, I’ll reflect on change, transition and the unexpected legacy of 19th- and 20th-century Cornish mining heritage.

THE LAST TIN MINE IN CORNWALL
The county of Cornwall is located in the far southwest of the British Isles. Tin and copper mining, along with the extraction of other minerals, was a leading industry in Cornwall during the 18th and early 19th centuries. During the early 19th century Cornwall dominated world copper production (Buckley 2005) and the scale of the industry is evidenced by the great estates built by the mineral lords, industrial settlements and the remains of transportation systems and ore extraction and processing (Orange 2012). During the 19th century, miners, agricultural workers, tradesmen and their families also sought better opportunities abroad, leading to a significant exodus of people during Cornwall’s ‘Great Migration’ (c. 1815-1930). ‘Cousin Jacks’ (as Cornish miners overseas were nicknamed) contributed to the development of overseas mines (Payton 2005). Somewhat ironically, by the 1860s foreign competition coupled with fluctuations in metal prices had severe consequences on the homeland industry. The first of a series of tin crashes led to a long and painful deindustrialisation (Orange 2012). Around 20 percent of men in Cornwall went overseas to find work in each decade from 1861 to 1901 (BBC 2004).

In the wake of deindustrialisation and exodus the remains of granite-built mine buildings and concrete-dressing floors littered the coastline, moors and valleys. Tin mining limped into the 20th century and was, by the post-war period, the preserve of a handful of large and rich ‘super-mines’. For much of the post-war period, the older, derelict mines were commonly viewed as wasteland. Stripped of valuable, recyclable materials following closure, the old mines had no clear economic value (Schwartz 2008, 10). One social function that they fulfilled was to provide a place to dispose of large household items, and by-products from the agricultural industry including animal carcasses and chemicals were routinely disposed of down mine shafts (Orange 2012, 248-49).

During the 1980s, the increasing use of aluminium and industrial recycling schemes lowered the global demand for tin. In consequence, the

“Cornish boys are fishermen and Cornish boys are miners too. When all the tin and fish are gone, what will Cornish boys do?” Graffiti on the boundary wall of South Crofty Mine, Pool, Cornwall. Photo by Charles Winpenny. http://www.cornwallcam.co.uk/bestofinland/scrofty2.htm
International Tin Council collapsed in October 1985, no longer able to maintain tin prices. The conservative government refused to subsidise the industry (Harris 1986) and, unable to compete with foreign producers, the last mines in Cornwall closed. South Crofty, the last tin mine in Cornwall, closed in 1998 (Schwartz 2008, 87). The two lines of graffiti painted on the boundary wall at South Crofty (Fig. 1) demonstrate the importance of the mining industry to the local communities. Mining was, in local parlance, ‘a proper job’.

CORNISH MINING WORLD HERITAGE

Eight years after South Crofty Mine closed, the following announcement appeared in the Times newspaper:

Relics of 2,500 years of mining that litter the Cornish landscape were given World Heritage Site status yesterday. The honour ranks the remains alongside the Taj Mahal, the Great Wall of China and the Pyramids at Giza (de Bruxelles 2006).

In 2006, ten mining areas in Cornwall were inscribed as a World Heritage Site. WHS was awarded in recognition of the international importance of Cornish mining for the period 1700-1914 (Cornwall Council 2011). Comparisons between Cornish mines and the Pyramids at Giza would have seemed very odd, if not laughable, a few decades previously. Within a generation, a marked shift had occurred: labelled world-class heritage, the remains of the Cornish mining industry were valorised, cleaned-up and given a new economic role within Cornwall’s tourism industry. WHS also built social capital within local communities through increased pride and commemoration of the industrial past (Orange 2012).

This shift in policy toward Cornish mining sites can be situated within the broader context of the UK heritage boom under the conservative government of Margaret Thatcher (Wright 1985). A grass-roots movement to preserve the remains of the Industrial Revolution had emerged several decades earlier, and the heritage ‘industry’ (Hewison 1987) went on to adopt foundries, factories, bridges, railways and textile mills as national icons alongside grand country houses, castles and fortresses.

INDUSTRIAL ARCHAEOLOGY IN THE UK

Within living memory, the motor car, radio and aeroplane have been invented. Yet the ‘Tin Lizzy’, the crystal set and the biplane are already so out of date as to be museum exhibits (Rix 1955, 5).

In 1955, a short article by Michael Rix introduced the term ‘industrial archaeology’ to amateur historians in the UK. However, it was a public outcry over the demolition of the Doric Portico at the Euston railway station in 1962 which popularised the term. The objection to the demolition highlighted the vulnerability of the remains of the Industrial Revolution during a time of post-war urban redevelopment (Buchanan 1980; Samuel 1994). In consequence, a number of amateur groups and societies formed, and the Council for British Archaeology (CBA, est. 1944) established an Industrial Monuments Survey in 1963. A national association in the form of the Association for Industrial Archaeology was established in 1973, and in 1976 the publication Industrial Archaeology Review was launched (Buchanan 1980, 355, 361). The value (archaeological, historical, social, etc.) of industrial sites became widely recognised. In Cornwall, local societies restored a number of...

The winding and pumping engine houses of Crowns Mine, Botallack, Cornwall. Photo by Hilary Orange.
mine engines and buildings (for example, the Carn Brea Mining Society restored the engine houses at the Crown Mines, Botallack, in the 1980s) (Fig. 2). Mine sites in Cornwall were subject to a number of reviews and surveys, and the National Trust (a charity which protects historic buildings and countryside) began to clean up mines upon acquisition of coastal land (Orange 2012, 62).

From these beginnings, the study of industrial archaeology, mainly characterised by a techno-monument-centred approach to the recording of the remains of the Industrial Revolution, developed rapidly. The Association for Industrial Archaeology now has around 500 individual members and is affiliated to around 50 local groups and societies. Amongst its many activities, the Association has an annual conference, organises overseas visits, carries out policy work and awards grants and prizes (Wikipedia 2014).

**TIME AND INDUSTRIAL ARCHAEOLOGY**

As Marilyn Palmer and Peter Neaverson have argued, the emergence of industrial heritage in the UK was a matter of the “acceptability of elements of past culture in the contemporary landscape” (1998, 141). Does a certain amount of time need to elapse before past culture becomes acceptable? This probably depends on where individuals and policy makers draw the line between the past and the present. James Symonds has suggested that a common perception is that industrial archaeology belongs to a time ‘after history, i.e., belonging to a slightly earlier version of us, just beyond living memory’ (2005, 36). However, responses to a survey organised by the BBC History Magazine suggest that the perceptions of the magazine’s readers vary widely. Answers to the question ‘When do events in the past become history?’ ranged from ‘one second ago’ (31 percent) to ‘ten years ago’ (28 percent) (2009).

Some archaeologists are no longer waiting for an interval of neglect to pass (if such a thing exists). Over the last decade, contemporary archaeologists in Europe, Scandinavia and the US have been focusing on the period after the 1970s and considering, for example, military bunkers, socialist housing estates and prison complexes (Harrison and Schofield 2010; Graves-Brown et al. 2013). Archaeologies of transition have also been undertaken, for instance, the recording of industries and industrial process through draw-down and closure (Badcock and Mallaws 2004; Cocroft and Cole 2007). A growing number of studies have also integrated ethnography with traditional archaeological methods, for instance, Hewitson recorded artefacts at a boatyard and jewellery workshop by utilising oral accounts from former workers alongside video documentation, written, drawn and photographic records (Hewitson 2012). Without oral history, as memories fade, we may increasingly rely on reverse-engineering the industrial past (Moshenska 2012).

The inclusion of 20th-century military sites and defence estates within a recently published Industrial Archaeology Handbook (Palmer et al. 2012) suggests that industrial archaeology is, in turn, considering the recent past and broadening out beyond the classic 1914 boundary. I would argue that a broadening out is particularly important if trusts, groups and local societies are to attract younger members: different age groups have different pasts within and beyond living memory. The problem of aging and declining numbers of members, and the challenge of engaging young people, was raised at a discussion-based forum on the ‘Future of Societies’ in York in 2013 (CBA 2013). Industrial archaeology needs to engage younger and more diverse audiences, and it could consider new periods, new materials and new technologies as part of a broader strategy of engagement. Otherwise, the corollary is that grass-roots organisations will wither and their place will be taken by academics and heritage professionals (pers. comm. David Gordon, 24 February 2014).

**NEW MATERIALS**

In 2006 Nicholas Johnson pointed out that archaeologists are positioned at the ‘end of a moving staircase’. In time, they ‘have to accept concrete buildings just as much as we accept brick buildings’ (Johnson 2006). If one accepts that industrial archaeology is not confined to the period of the Industrial Revolution, we can anticipate the materials coming off Johnson’s escalator. The industrial archaeology of the future is, after all, being created in the here and now. We could look at the materials and technologies which are trickling down from the aerospace and automotive industries into civil engineering projects: fibre-reinforced composites and smart materials which can change their properties in response to external conditions.

Matt Edgeworth has written on the im-
portance of traversing scale, of grasping ‘the immense textural depth of artefactuality in the contemporary world’, including development in computer engineering, synthetic chemistry and ‘artefacts’ at both microscopic and nanoscopic levels (Edgeworth 2013, 380). The site of the 2012 London Olympics at Stratford in East London was heavily contaminated by industrial solvents that had leaked into the groundwater (Gardner 2013; BBC 2010). Pollution (in the form of previously non-existent chemical substances and new elements) forms part of the evidence of human influence put forward for the Anthropocene (Martini 2013) (Fig. 3). Following Edgeworth, such ‘materials’ can be reframed as part of the archaeological record; however, they present a variety of problems (risk, mitigation, remediation, etc.) and may defy standard recording procedures – for example, unstable industrial residues which are one thing in the ground and another once recovered. While concrete and brick are responsive to current archaeological enquiry, some of the materials which step off Johnson’s moving staircase may challenge and inspire future developments within the field.

IN CONCLUSION: WHERE ENGINEERS GO, INDUSTRIAL ARCHAEOLOGISTS FOLLOW

Industrial archaeology is where technology, engineering and materials collide and become entangled with people’s everyday lives. It is worth keeping abreast of current advances in the sciences of materials and engineering. Where engineers go, industrial archaeologists tend to follow.

In the UK, those who study industrial remains have room to manoeuvre between related sub-disciplines such as contemporary archaeology, historical archaeology and industrial anthropology (see Orange 2014). Industrial archaeology can become a broader church. The field is still young, and there is a certain freedom to shape future directions, including the ‘alloying’ of different methods and perspectives around a common theme.


WITH GRATITUDE

I wish to thank Diana López Sotomayor for the
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REFERENCES


