

Toxic City: Industrial Residues, the Body and Community Activism as Heritage Practice in Glasgow

Arthur McIvor (University of Strathclyde, Glasgow, Scotland)

Orcid: <https://orcid.org/0000-0001-8907-3182>

Chapter draft for Elizabeth Kryder-Reid and Sarah May (eds), *Toxic Heritage: Legacies, Futures and Environmental Justice* (forthcoming, 2023)

Keywords: Toxic legacies; heritage; community activism; environmental justice; chemicals; Glasgow

Abstract

This chapter aims to contribute to the ongoing conversation around toxic heritage with an exploration of community activism and the legacies of industrialization in Glasgow, Scotland. The focus is on campaigns around environmental justice associated with the chemical industry - what one witness described as the 'chemical Chernobyl' in the city. The paper aims to deepen the conversation around working class environmentalism, exploring community activism as heritage practice, evaluating how activism engages the toxic heritage of industry and how the industrial past has infused the present. This provides an opportunity to reflect on Laurajane Smith's idea (Smith 2006) of the 'authorised heritage discourse' (AHD) in the context of Glasgow, where we see the virtual erasure of the toxic environment subject from the museums, heritage centres and memorialisation in the city. The essay draws

upon a range of sources, including some oral testimonies and storytelling, which constitute a vital but contested strand of the intangible heritage of the city, frequently challenging, in essence, the AHD. Such citizen stories facilitate, as Hilary Orange (2016) has argued, 'reanimation' of the industrial past.

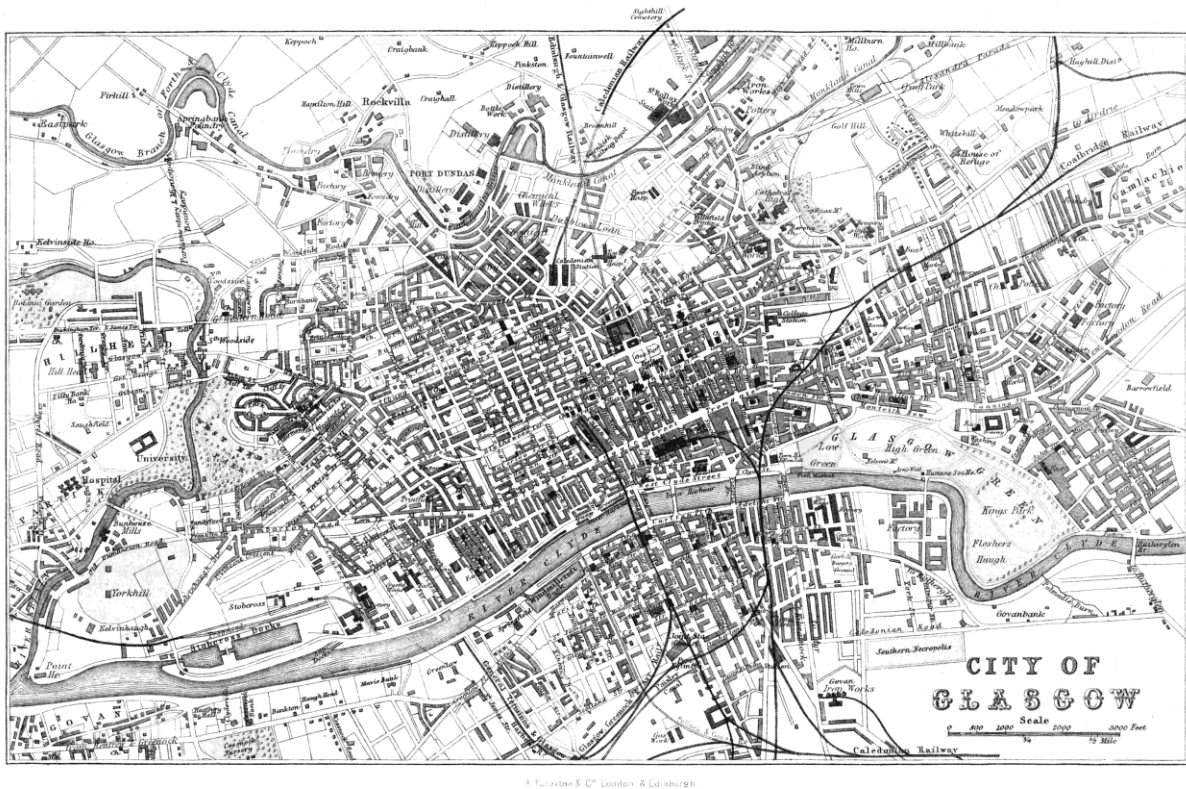
Glasgow was a city characterised by high levels of ill-health and premature mortality in working class neighbourhoods of the city, with significantly higher rates of toxic contamination and related cancers amongst those who lived in communities adjacent to industrial works, chemical factories and mines. These health inequalities have become known in public health circles as 'the Glasgow Effect'. This undervaluing of working class lives has been described aptly by Karen Bell as 'environmental classism' (Bell, 2020, 1-26). This chapter aims to contribute to the ongoing conversation around toxic heritage with an exploration of community activism and the legacies of industrialization in the Scottish city that hosted the COP26 conference in 2021. It focuses on campaigns around environmental justice associated with the chemical industry. There is engagement with some of the work of deindustrialization studies, environmental history and heritage scholars, and consideration of the assertion by Scottish environmental activist Kevin Dunion that 'careless passivity and grumbling resignation' characterised Scotland and 'the north' [of England] (Dunion, 2003, 230). A key focus here, however, will be to explore community activism as heritage practice, evaluating how activism engages the toxic heritage of industry; how the industrial past has infused the present. We see this in community activism in creative modes of resistance – through advocacy and

campaigning, but also in the deployment of memories and storytelling. I also want to reflect here on Laurajane Smith's idea of the 'authorised heritage discourse' (AHD) in the context of Glasgow, where we see the virtual erasure of the toxic environment subject from the museums, heritage centres and memorialisation in the city (Smith, 2006). The essay draws upon a range of sources, including some oral testimonies, which constitute a vital but contested strand of the intangible heritage of the city, frequently challenging, in essence the AHD.

Glasgow: industrial legacies, toxicity and the limits of regulation

Scotland's industrialisation in the nineteenth century was centred on the port city of Glasgow and industrial conurbation of wider Clydeside, and the scattered largely isolated coal mining communities in its hinterland of Lanarkshire and Ayrshire. Industries in this area included iron and steel making, shipbuilding, heavy engineering, textiles, clothing, plastics, electronics and a wide range of chemical manufacture. Employment in transport and construction was significant too as the Victorian city bulged and expanded, attracting migrant labour from far afield. In 1821 the city population stood at 147,000; a century or so later population peaked at over 1 million, dropping back to 636,000 today (2020). Economic insecurity, grim working and slum living conditions germinated a powerful labour movement by the early twentieth century, with the city developing a reputation (much like Vienna) in the first half of the twentieth century for powerful and belligerent trade unions and a vibrant and eclectic socialist politics. 'Red Clydeside' has been the topic of much debate and controversy within the contested historiography of the city.

Figure 1.1



Caption: Map of Glasgow, 1878, depicting the industrial areas, docks and packed working-class tenements to the north, east and south of the city centre, and the middle-class neighbourhoods in the west).

Courtesy of Mikhail Ryazanov (derivative work), via Wikimedia Commons. Accessed: https://commons.wikimedia.org/wiki/File:Glasgow_map_1878.png.

Working class tenements were closely clustered around the industrial workplaces (largely concentrated in the north, south and east of the city) and it was these working class communities that bore the disproportionate brunt of toxicant contamination, smoke, smog, noise pollution and the odour of industry. Its fumes, particulate, organic and chemical by-products were smelt, ingested and inhaled into the bodies of citizens. Brought up in a company house in the 1940s and 50s in the

environs of the massive Govan Ironworks in Glasgow (where her father worked)

Marion Neil recalled something of this milieu:

I can always remember everything was...even at home in the house and the garden, everything used to get a tremendous amount of soot and, you know, it was very, very dirty outside ... Lots of smoke, yes. That caused lots of problems as well, you know ... it came over towards the house of course and even with my mum hanging washing out there was a problem, you know.

There was difficulty keeping things clean, you know.¹

Marion added: 'Oh there was lots of noise, yes, it was very noisy. You got used to that of course'.

Industrial urban smells could also be pungent and persisting, especially around the neighbourhood of cattle and fish markets, abattoirs, bone meal factories, breweries and chemical works. Amongst the worse was the infamous 'stinky ocean', a festering pond of sulphurous liquid chemical waste up to 80 feet deep dumped over 150+ years since the 1790s from Tennants St Rollox Chemical Works (which covered a 100 acres site), surrounded by solid chemical waste and 'Jack's Mountain' – a massive chemical waste bing (Jack, 2021). This blighted the Sighthill neighbourhood in north Glasgow with its rotten eggs (hydrogen sulphide) stink until the 1960s.²

People living in the district (mostly consisting of working class tenements) became inured to this assault on their senses and kids played across the polluted area. One recalled: 'The stinky ocean smell was just about everywhere around there. Wit a braw smell ... could be bloody hooching after a bit of wet weather and then the sun came oot, It really whiffed up then'.³ And another ex-resident commented: 'Aye I remember playin' on Jacks mountain and the stinky ocean – used to get a tankin'

from my Maw for coming home covered in grey “clabber” from it!’ . Another resident described it as ‘real third world conditions right in the heart of Glasgow ... we played there regularly along with most of the children from the Garngad, Townhead and Springburn areas’.⁴ Rancid odours also emanated from the canals (such as the Monkland Canal) and the rivers (such as the Kelvin) that fed into the Clyde, due to the chemical discharge from industrial works (Meighan, 2008; *Glasgow Keelie*, May 1991). Paper mills, glass works and brickworks were amongst the worst offenders.

Industrial ‘residue’ lurked in people’s bodies, especially their respiratory system (Sweeney, 2021). Like other industrial cities, for much of the twentieth century Glasgow experienced massive smoke pollution and suffered from recurrent smogs, where the dust, grit, soot and sulphur-dioxide laden smoke from industrial chimneys and domestic fires was drawn downwards by atmospheric conditions. On average in the 1950s over 200 tons of ‘solid deposit’ fell on every square mile of the city every year (Report of the Medical Officer of Health, hereafter RMOH, 1958, 288-9). David Walker grew up a heavily industrialised and deprived area of Glasgow, and recalled: ‘my own memory is of having bronchitis every year of my youth in Linthouse, Govan until we moved to a smokeless zone area in Mosspark in 1967. Linthouse has loads of tenements and everyone had a coal fire’.⁵ In the two weeks following the worst smog days in 1958 bronchitis deaths rose to three times the level of the same period in 1957 (RMOH, 1958, 11-12). Thomas Ashford, the Senior Smoke Inspector for the city, reported a ‘growing intolerance of the public to atmospheric pollution’ and ‘many complaints’ (RMOH, 1958, 287). These included belching emissions from railway shunting yards and from ships using the Clyde and berthed at the docks and wharves. The recurring smogs revealed the ineffectiveness of the Clean Air Act

1956, which had introduced controls on emissions and smoke-free zones (Marsh, 1963, 387). As with occupational health and safety, there remained a considerable gap between regulation and actual practice, with polluters continuing to breach the legal code with impunity.

Glasgow has the unenviable reputation of being one of Europe's most unhealthy cities, with high levels of multiple deprivation. And issues with poor air quality persisted. In a recent report by the World Health Organisation in 2017 Glasgow was identified as having the highest levels of air pollution of 51 UK towns and cities (including London).⁶ Two recent studies have also highlighted long-standing legacies of industry and associated environmental concerns. Building on research by Balls in 1995-7, a recent study (2020) has identified the continuing high levels of historic pollutants in river sediment studies: 'The Clyde Estuary, Scotland, is an optimal example site to determine environmental 'stress'', the researchers argue, 'historically being one of the most contaminated estuarine environments in the UK' (Rodgers, et al., 2020, 1058). And U.S. environmental geographer Juliana Maantay pointed to the 'after life', or residues from industrialisation, identifying 927 separate 'brownfield' vacant and derelict land (VDL) sites across Glasgow in 2011, mostly former factory sites (including the Govan Ironworks site), many of which were polluted from decades of industrial contamination (Maantay, 2013). The vulnerability of communities in the present to this toxic legacy of the past is evident: 60% of the population of Glasgow were living within 500 metres of a VDL site, the highest proportion of people living in close proximity to such potentially polluted land of any local authority in Scotland. How this played out in one such neighbourhood – the

Shawfield district of Rutherglen in the south-east of the city – is explored in the next section.

‘Chemical Chernobyl’: Environmental injustice, activism and the Glasgow chemical industry

Glasgow was the centre of a thriving heavy industrial chemical industry, including iconic plants such as the Tennants plant in Rollox, north Glasgow and J & J White’s works in Rutherglen (established 1820). These chemical plants produced a wide range of products servicing industrialisation and consumer needs, such as bleach and soda powder (used extensively in the textiles industry) and chromates (used for ceramics, paints, plastics, corrosion prevention, chrome plating, pharmaceuticals and explosives). Work conditions could be terrible though. The socialist activist Keir Hardie commented scathingly on a range of occupational health and safety issues at Whites plant in the 1890s, including skin lesions from the chrome (‘chrome holes’), liver and digestive disorders and respiratory problems from inhaling toxic fumes (including complete erosion of the nasal septum), describing the workers as ‘white slaves’ (Walker, 2005; Walker 2007; Hunter 1959, 135). Ironically one of the company owners responsible for such historic bodily damage was James White II who was awarded a Lordship (becoming Lord Overtoun) and has a statue erected (in Cathedral Square, High St) in his honour for civic and philanthropic activities.

Figure 1.2



Caption: Statue of James White II, owner of the White's Chemical Works in Rutherglen, Glasgow (photographed by the author).

The company continued to expand and by the 1930s was employing 900 workers, responsible for 70% of chromate production in the UK. It ceased production in Rutherglen in 1967.

Figure 1.3



<https://canmore.org.uk/collection/595654>

Caption: White's Chemical Works, Shawfield, Glasgow, 1967 (showing an already derelict section of the works, with the river Clyde in the foreground)

From CANMORE and courtesy of Historic Environment Scotland and J.R. Hume (photographer)

There are few remaining traces of what it was like to work in the White's chemical works. However, a rare interview conducted by David Walker for the Scottish Oral History Centre with ex-worker Richard Fitzpatrick provides some sense of prevailing work conditions and the toxic exposures workers faced.⁷ Richard described how he worked as a labourer with his father and brother in the plant in the 1940s and 1950s.

All of them lost their nasal septum – earning them the local nickname of ‘White’s whistlers’. Richard also suffered from skin lesions, experiencing chrome and soda corrosion holes on his arms and feet. He evoked the hard, hot, sweaty physical graft and the assault on the senses working in the antiquated plant, reflecting on the dust-laden atmosphere, the inadequate personal protection equipment (‘muzzles’) and the inefficient exhaust ventilation:

There were always dust flying about ye know ‘specially there [in the crystal department] again we’re back tae the chromic acid ye know ... there was about eight or nine furnaces but it was always dusty ..., ye couldnae avoid that.

His awareness of the danger points and common-sense fatalism in regard to accidents and ill-health seeps through the testimony. When asked if he could have done any more to protect himself he retorted:

I don’t think I could have done anything bar put about ten muzzles [face covering] on (laughter), you know what a mean. If you were working with the stuff you covered yerself up but when you were walking about ye couldnae walk about wi a muzzle on all the time. ... Just one of these things.

Figure 1.4



Caption: White's Chemical workers, c1940s. Richard Fitzpatrick is fifth from the left, middle row. Courtesy of Richard Fitzpatrick and David Walker (interviewer).

Figure 1.5



Caption: Richard Fitzpatrick at the time of his interview with David Walker, 2004 (courtesy of Richard Fitzpatrick and David Walker).

Richard Fitzpatrick's remarkable testimony from memory provides one story, or discourse practice around toxic legacies. He shows through this embodied narrative and physical scars how the residue from the plant persisted within former workers' bodies long after closure, evident in tissue destruction and breathing impairment.

The White's Rutherglen chemical plant site covered 30 acres (12 hectares), with 30-40% of this devoted to waste disposal into pits dug on site. Once capacity was reached on site, excess waste was disposed of around various other locations in

East Glasgow in and around Rutherglen, including old pits, mines and quarries (a legal practice at the time). Some 2.5m tonnes of such waste from the plant was dumped outside the boundary of the chemicals works itself.⁸ Awareness of toxicant contamination from these sites appears to have first surfaced in 1990 when a land survey for building development on nearby playing fields discovered massively high levels of chromium ore processing residue. Chromium (Cr) was found to be leaching into the water table and flowing into local streams (called 'burns' in Scotland) and through to the river Clyde, contributing to the dire pollution of that waterway and the destruction of animal, fish and other organic life (*The Herald*, 21 March 2019).

Recently, sediment studies of the river Clyde show chromium to be one of the most prevalent of the base metals detected, with continuing unknown impacts on organic and microbiological life (Rodgers et al, 2020). The carcinogenic hexavalent chromium (Cr VI) contamination is the same as that featured in the movie *Erin Brockovich* (2000), based on a true story around local residents' cancer prevalence in Hinckley, California. Locals in Rutherglen recall the streams – such as the Polmadie Burn – running bright green and 'luminous yellow' with chrome

The Polmadie Burn and known chromium waste dump sites (including the Glencairn football ground, Toryglen playing fields and the Dukes Road playing fields) were fenced off with 'Danger: Keep Out' and 'Keep Out Contaminated Land' signs erected. Rutherglen resident Tommy McAvoy, who had a brother and grandfather who worked in White's, recalled in 1995:

I was born and brought up just a couple of hundred yards from that factory and used to play in the streams and the burns adjacent to it, despite the fact

that the burn ran all sorts of colours as a result of the chemicals dumped in it. One did not realise the dangers at the time; it was only in later years that one realised the environmental mess that the place was in (Hansard, 1995).

McAvoy (born 1943) is recalling a childhood in the 1940s and 1950s when the plant was operational. His comments in 1995 were made when McAvoy was the Labour Member of Parliament (MP) for Rutherglen (1987-2010) and the leading senior politician campaigning on the health risks and for remediation of the site at the time. Local resident Alison Tait also recalled playing as a youngster amidst the polluted area. She told how her father who worked in the White's plant died of cancer aged 51 in 1966 (which she suspects was work-related) and how local people were acutely aware of the issues:

When I was older I heard my aunts talking of the number of male neighbours from Farme Cross, who had worked at White's and died prematurely. These ordinary women pointed the finger at White's even then but there was no evidence (*The Herald*, 6 March 2019).

Rose Mary Brown was one of those. She recalled:

My father Harry Bradley worked in Whites until it closed in 1967. He died in 1973 at the age of 59. When he went for radiotherapy at Belvedere [hospital] it was like an old or really more truthfully, a young boys reunion of Whites workers.⁹

Two 'official' epidemiological enquiries into high leukaemia rates in the area, however, found no proven correlation with the CrVI contamination, or heightened risk. Nonetheless, as McAvoy commented:

Greater Glasgow Health Board concedes that these sites are health risks if the chromium waste is disturbed; the dust can be breathed in, which can cause health problems. Problems can be caused if the chromium is touched. If young children play on the sites and then put their hands in their mouth, swallowing the chromium can also cause them health risks.

'Families are quite right to be concerned' said MP McAvoy (in 1995), 'and to pressurise and harass me to try to get something done'. Families like the Fitzpatricks, Browns, Tait and the McAvoy were affected cumulatively by the lifelong risks of both working in the chemical industry and by the environmental exposure that emanated from it.

Grassroots community activism coalesced in a local action group being formed: Cambuslang, Carmyle and Rutherglen Against Pollution (CCRAP). It organised a local meeting at the Rutherglen Burgh Hall in April 1992, dubbed 'Chrome Day' where the full details of the pollution in this 'chemical Chernobyl' (as one witness described it) were revealed to the public (*Glasgow Keelie*, July 2022). Scottish environmentalist Kevin Dunion recounted that local activists located ex-company lorry drivers who gave information about where they dumped the toxic waste. The community was not invited to engage with the prior and ongoing scientific studies, so activists produced their own report, *How Safe is Safe?* Such 'citizen science', tracing 'exposure pathways' and 'toxic trespass' into bodies, and challenging in the process more 'orthodox' science and knowledge, replicated what was happening within community environmental activism elsewhere (Brown, de la Rossa and Corder, 2020). 'By the end of our research' a CCRAP activist later noted, 'we listed 65 sites throughout the areas from Cambuslang to Dumbarton'.¹⁰ As the sites were

investigated for contamination it was found one site (Duke's Road Playing Fields) had over 40 times the threshold (normal) chromium VI level and another one site (the banking at Rutherglen Glencairn Football Club) had over 150 times the threshold level. Dunion argued: 'without the efforts of the local activists and their links with the community, the extent of contamination was unlikely ever to have been discovered' (Dunion, 113). The radical paper *Glasgow Keelie* (1990-93) reported the activities of CCRAP and noted in May 1992 that there were 'clusters of cancers, leukaemias, abortions and respiratory complaints in the area'. A trade union official Pat Graham argued: 'the pollution in the Cambuslang district is so intense and widespread, it should be classified as a disaster area and evacuation, not development, should be considered as the only safe alternative' (*Glasgow Keelie*, May 1992). Celtic Football Club abandoned plans to relocate to the area partly as a consequence of the furore resulting from CCRAP's campaigning (after having failed to extract an apology from CCRAP).

CrVI is both poisonous and carcinogenic. The 2000 study by Glasgow Corporation Health Board based on *self-reported health* found 25% of those residents in the affected area *believed* chromium levels to be harmful to their well-being and health. These lay beliefs embedded within a large minority of the population speak to distrust of 'official' medico-scientific knowledge and the significance of what the researchers called 'perception and possible anxiety'. Dunion argued:

The health of the people may still have been affected by the exposure, not in the manner in which occupational exposure afflicts workers but in the commonly experienced diminution of well-being and increase in stress ... The

people of Rutherglen are the unknown complainants of environmental injustice (Dunion, 117).

Who was to be responsible for the costs of remediation was a primary sticking point in the 1990s. J & J Whites and successor chemical companies were all in liquidation and chasing the company insurers also proved fruitless. Legally there was no recourse. This is a recurring theme as polluters rarely pay fully for their actions.¹¹ MP Tommy McAvoy then lobbied the Scottish Office for funding (effectively from taxpayers pockets). This was refused, ostensibly because the site did not meet what was then the criteria for funding environmental remediation – which was that the site should have a demonstrable economic end use. Environmental and health criteria were not accepted, illustrating blatant injustice, the power dynamics of the day and almost total disregard for the concerns of local residents, themselves living in an area of multiple deprivation, with heightened levels of vulnerability to chronic ill-health. McAvoy commented on the Scottish Office intransigence in the face of what he called an ‘environmental disaster’ as ‘like bashing my head against a brick wall’ (Hansard, 1995).

Just how much environmental / ecological / human damage was caused by two centuries of toxic pollution from White’s chemical plant is unknown. After the issue was exposed in the early 1990s, it was still over a decade before serious work began on remediating the site, by a consortium called Clyde Gateway, funded by Glasgow City Council and South Lanarkshire Council. This was linked to economic redevelopment of the site and the idea of a cleaned-up revitalised Clyde river being central to Glasgow’s aspirations as a tourist attraction (see the chapter on Swansea

in this volume for discussion of similar issues). Health and environmental concerns appear to have again been less important than perceived economic benefits. Over £30 million was spent in the first phase of three planned remediation phases, with an estimated cost (in 2019) of over £54 million reckoned to be needed to complete the job of cleaning up the full site. In 2019, the present local MP Ged Killen was trying to exert pressure on the UK government to step in to fund the shortfall (*The Herald*, 6 March and 21 March, 2019). At this point the Scottish Environmental Protection Agency had stepped in to initiate monthly monitoring checks on the Polmadie Burn and the Oatlands Community Council had joined the campaign. The issue had also attracted the attention of the UK monitoring agency environment *analyst UK*, who produced at least four commentaries on the White's chromium contamination in 2019.¹² The fundamental problem, environmental health researcher and campaigner Andrew Waterson argued, was the control of Scotland by the UK government and their lack of will to address the issue - hence nationalism became entwined with the protection of citizen's bodies: 'each year more people die from exposures to these dangerous substances ... causing cancers, respiratory and other diseases than from road traffic fatalities, murders and suicides combined' (*The National*, 20 April 2019). Waterson pointed to much more robust regulatory regimes for historic toxicant control and toxic use in Ontario, Canada and Massachusetts, USA. In Scotland, Brexit and Covid-19 have subsequently intervened, so the problems of exposure to dangerous chemicals, including chromium VI contamination, in Scotland's most toxic city endure. The Polmadie Burn (where not culverted) continues to be observed running 'luminous yellow', causing much anxiety for local residents (*Glasgow Times*, 26 April 2021).

Concluding thoughts: narrating, curating and memorialising a toxic city

Community activism on the chemical industry's toxic heritage drew upon and found inspiration in a long tradition of irreverent radical protest in the city associated with 'Red Clydeside'. This was fuelled by a strong sense of community, equality and fairness linked to ideas around the moral economy, and a leftist politics that found expression in strong support for socialism and the Labour Party in the city, and, as deindustrialisation deepened, support for a left-leaning populist Scottish National Party. The activist-led campaign against the toxic heritage of chemical pollution in the city mirrored other eruptions of community activism on environmental issues. Notably, a powerful grassroots anti-asbestos movement emerged in the 1980s – Clydeside Action on Asbestos (CAA) - to advocate for victims, and this morphed over time into an influential environmental justice movement. Working class environmentalism, epitomised in voluntary citizen-led groups like CAA and the chemical pollution campaigners (CCRAP) in Rutherglen, and widely supported politically and in civic society from the 1980s, was important in shaping a vibrant and influential environmental justice movement. Here resistance and community activism, fuelled by memories and storytelling, was a primary heritage practice.

Storytelling and 'banter' has a long tradition in Scotland, and in Glasgow toxic heritage legacies are recollected vividly in memory practices. In these stories, dark humour often mediates the real risks to health being navigated every day. Toxic pasts are curated, archived and in turn recreated today, offering lessons and inspiration, feeding and energising community activism.¹³ Such citizen stories are witnesses to environmental harm and a vital source enabling, as Hilary Orange put it,

'reanimation' of the industrial past (Orange, 2015). The city is also home to pertinent documentary archive collections, including the papers of the Occupational and Environmental Diseases' Association (OEDA), set up by Nancy Tait, the wife of a mesothelioma victim, and other environmental justice activists, such as Alan Dalton and Harry Flynn (At the University of Strathclyde Archives and Special Collections). Nonetheless, what is remarkable is the extent to which toxic industrial legacies, from asbestos to chemicals, fail to feature significantly in Glasgow and West of Scotland's many museums and heritage centres – much like the history of 'Red Clydeside' is sidelined (McIvor 2019). With some exceptions, instead of funding reinterpretations based around environmental history and the intangible heritage embedded in people's memories, the City leaders have focused attention on art, culture and the display of material objects in their museums, such as the Museum of Religious Life, the famous Kelvingrove Museum, the Burrell Collection and the Riverside (transport) Museum. Nor have the untold number of lives lost to the occupational and environmental legacies of industrialisation been publically memorialised in the city. The statues of industrialists who were also major polluters, however, remain standing (such as the Lord Overtoun statue in Cathedral Square). The nearest to such memorialisation lies 8 miles away in Clydebank, where the remarkable international asbestos memorial was erected in 2015.

Figure 1.6



Caption: International asbestos memorial, Clydebank (photographed by the author)

This impressive memorial (by the artist Jephson Robb) to ‘all those known and unknown’ who have died from asbestos-related disease was commissioned by the local victim’s organisation, Clydebank Asbestos Group, and opened in 2015.

What is evident in the city then is a virtual erasure of the environmental story – of toxic industrial Glasgow. Reminders of pollution and toxic residues are not good for tourism; not resonant of the kind of image the city wishes to promote. What Laurajane Smith (2006) has referred to as the ‘authorised heritage discourse’ (AHD)

dominates the heritage space and public memorialisation, with a focus on the contribution of Glasgow to science, technology and the industrialisation process – celebrating inventors and businessmen, ships, steam engines and locomotives - and, to a lesser extent, religious and cultural developments. The environmental disaster of Glasgow's industrialisation has largely been airbrushed out – though it is still evident in the black staining of some tenement blocks in neighbourhoods that missed the gentrification cleaning frenzy of the 1980s and 1990s. The ecomuseum movement of France has found no place as yet in Glasgow and the wider Clydeside urban conurbation. And the physical heritage of industry has also largely gone. Only rarely were industrial edifices saved from the bulldozer, preserved and re-purposed in the city (Fairfields shipyard offices and the iconic Templetons Carpet factory are two such exceptions).

Glasgow, then, was blighted by environmental damage and harm caused by industrialisation but the response was not 'passive'. In the face of 'recalcitrant' polluters, erasure, invisibility and what Steven High has called 'class cleansing' and 'forced forgetting' there was considerable resistance (High, 2021, 173). In relation to asbestos and toxic chemicals, environmental activism was significant. However, for a long time economic imperatives, jobs, wages, housing and occupational and public health issues superseded environmental ones in city and workplace politics and community activism. Only relatively recently has environmentalism moved to centre stage politically (from the 1980s). Whilst there was an identifiable transition from occupational health and safety to wider issues of environmental harm and injustice, this transition to advocacy for sustainable development appears to have come later to working class communities and the labour movement in Glasgow (Sellars, 1997).

Class played a part here. Glasgow was an archetypal proletarian industrial city. As Bell has argued, working class activists could find themselves alienated from a predominantly middle class environmental movement (Bell, 163-192). Environmental justice organisations, like Friends of the Earth Scotland and the Scottish Campaign for Nuclear Disarmament, had a predominantly middle class membership.¹⁴

The industrial past continues to linger on in the present in polluted soil, rivers, dirty buildings and in the bodies and memories of Glasgow's people. This dark shadow is an object lesson in what Linkon argues is the persisting 'half-life' of deindustrialization (Linkon 2013) and Dudley defines as the 'trauma' of deindustrialization where 'our well-being does not matter to the systems of power upon which we depend' (Dudley, 2021, 202). The intangible heritage of people's bodies and memories urgently requires to be harvested to reconstruct these interactions between environment, health and well-being and stories of power, injustice and community activism. And these aspects of the city's past, however unsavoury, deserve to be featured more in public history.

As Sweeney has persuasively contended in her cultural heritage work on asbestos, heritage practice needs to think more about 'dispersed relics' in the landscape and the intangible: 'to attend to the ways in which the industrial past has permeated the everyday present' (Sweeney, 50). Much more research is needed to comprehend how people were affected by toxic industrial environments, what might be described as the texture of feeling - what they felt about this, how they responded, and the work of trade unions and community activists on the environment (for a great

example see MacKinnon, 2020). The emerging field of environmental labour studies will contribute to this, and the green shoots of such enterprise are evident in Scotland (see Rathzel, Stevis and Uzzell, 2021). The gendering of agency and activism also deserves more attention. And we need to deepen the conversation and develop our understanding of the discourses around industrial legacies and residues, environmental harm, health and injustice and how narratives were shaped within the power dynamics of city politics and heritage institutions around the environment, deindustrialization and ruination in cities like Glasgow.

Acknowledgements

I am grateful to Dr David Walker for his wonderful interview with Richard Fitzpatrick in 2004, and for additional leads, information and photographs (1.4 and 1.5), as well as to the editors for many helpful comments on this paper in the drafting stage.

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² See 'Contaminated land around Glasgow and Lanarkshire', posts from 2002-2009. <http://www.hiddenglasgow.com/forums/viewtopic.php?f=25&t=6215&start=15>

³ <http://discuss.glasgowguide.co.uk/index.php?showtopic=18264>. This post 3 March 2010.

⁴ <http://discuss.glasgowguide.co.uk/Port-Dundas-and39stinky-Oceanand39-and39jackand39s-Mountain-t12403.html> Residents posts, 20 November 2007 and 14 December 2020.

⁵ Personal email, David Walker to Arthur McIvor, 3 May 2022.

⁶ BBC News, 31 October 2017. Accessed at: <https://www.bbc.co.uk/news/uk-scotland-glasgow-west-41816722>.

⁷ Richard Fitzpatrick interviewed by David Walker, Friday 13 August 2004 (Scottish Oral History Centre Archive, University of Strathclyde).

⁸ <https://www.groundsure.com/resources/toxic-glasgow-burn-under-investigation-what-can-historical-maps-reveal/>

⁹ Cited at <https://rutherglenheritage.wixsite.com/website-46/whites-chemical-company>.

¹⁰ Cited at <https://steeltoun.wordpress.com/tag/m74/>.

¹¹ Book editor Sarah May has made the point that the temporality of this, where toxins outlast legal entities responsible for them, is important - and interesting in relation to nuclear waste which is the only industry with responsibility for management beyond the lifespan of the company.

¹² See for example <https://environment-analyst.com/uk/74926/row-hots-up-over-rutherglen-chromium-pollution>

¹³ Made accessible, for example, through the Scottish Oral History Centre Archive accessed through the University of Strathclyde Archives and Special Collections at

<https://www.strath.ac.uk/humanities/schoolofhumanities/history/scottishoralhistorycentre/>

¹⁴ See the Friends of the Earth Scotland website. <https://foe.scot/about-us/our-history/>.