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After Chernobyl: Welsh Poetry and Nuclear Power

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Abstract

This article examines the responses of Welsh poets, writing in both English and Welsh, to nuclear power in the period after the Chernobyl disaster of April 1986. Fall-out from Chernobyl contaminated upland areas of North Wales adjacent to the country's two nuclear power stations, Trawsfynydd and Wylfa, prompting a backlash against the nuclear industry. Welsh poets played key roles in the anti-nuclear movement during the 1980s and 1990s, writing poems that respond both to the Chernobyl disaster and to nuclear threats closer to home. Furthermore, we trace the long aftermath of Chernobyl in the poetry of R.S. Thomas and Robert Minhinnick, which is frequently contaminated with the imagery and vocabulary of nuclear disaster.

Keywords

Chernobyl disaster, Welsh poetry, nuclear power, radiation, slow violence, hyperobjects

In the early hours of Saturday 26 April 1986, a series of explosions occurred in the Unit 4 reactor of the Chernobyl nuclear power plant near Pripyat, Ukraine, sending radioactive dust high into the atmosphere. That day and night winds blew from the south-east, carrying the radioactive plume north and west across Belarus and Lithuania to Sweden, where the alarm was first raised on 28 April in the midst of a 'deafening official silence' from the USSR.¹ In the following days, clouds bearing the isotopes iodine-131, caesium-137 and strontium-90 dispersed widely across western Europe, and subsequently the globe. Some

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of these clouds passed over Britain on 2 and 3 May, raining radioactive particles down on areas of North Wales, Cumbria and Scotland.² Ironically, in Wales fall-out was heaviest on moorland adjacent to Trawsfynydd nuclear power station in Gwynedd and not far from the Wylfa plant on Ynys Môn. Indeed, radiation alarms at both power stations gave the first indication that Chernobyl's disaster had spread to North Wales.³ Other kinds of alarms also began to ring in the months and years that followed. The tardy and disorganised response of the UK government angered farmers in Gwynedd, many of whom faced onerous restrictions on the movement and slaughter of sheep; and this led to some unexpected alliances with anti-nuclear protest groups.⁴ At the same time, activists shifted their attention decisively from Wales's implication in the proliferation of nuclear weapons to its role as a producer of nuclear power.

In this article we trace a parallel shift in the realm of literature, with a focus on the work of Welsh poets writing in both Welsh and English. Recent research has examined the characteristic features of an internally diverse 'British nuclear culture', as manifest at the intersections of science, politics and popular culture.⁵ Our contention is that literary history has much to contribute to this broader field, and that Welsh poetry since the 1980s provides a fascinating case study, one that exemplifies the contestation of state-level nuclear policy at local and regional levels.⁶ Jonathan Hogg observes that there was a 'resurgence of interest in nuclear issues in British society' during the 1980s, and this resurgence was particularly apparent in Wales, which was declared 'Europe's first nuclear-free nation' in 1982.⁷ Welsh poets played key roles in this phase of pre-Chernobyl anti-nuclear activism, both via their personal commitments and through their published works, offering a distinctive set of responses to 'nuclearization' that in turn contribute to the wider 'nuclear condition' of 1980s Britain.⁸ A significant number of Welsh poets wrote Chernobyl poems, which respond with varying degrees of directness to the catastrophe and its ramifications in Wales. Another cluster of poems redirect their readers' attention towards nuclear threats closer to home: at Trawsfynydd, Wylfa and Hinkley Point across the Severn estuary. Finally, we trace the long aftermath of Chernobyl in the work of two major Welsh poets writing in English, R.S. Thomas and Robert Minhinnick, whose post-Chernobyl poetry is frequently contaminated with the imagery and vocabulary of nuclear disaster.

Poetry and Radiation

Svetlana Alexievich remarks on the difficulty of thinking and writing about Chernobyl, describing it as 'a cataclysm for our minds'. The problem, she explains, is that the disaster has radically altered our collective understanding of space and time: the fall-out clouds issuing from the damaged reactor paid no heed to national borders and the radionuclides they dispersed around the Earth will persist for thousands of years.⁹ These circumstances have profound consequences for writers seeking ways of responding to Chernobyl, which is experienced as something that is at once far away and uncomfortably near; an event of the recent past that propels the present into a future that is too vast to imagine. The challenges of representing nuclear disaster are further compounded by the character of nuclear materials themselves, for radioactivity is simultaneously pervasive and

imperceptible to the human senses.¹⁰ If, as Daniel Cordle argues, the nuclear industry was 'knotted into everyday life' during the 1980s, then the Chernobyl disaster radicalised and made tangible this situation through its transnational dispersal of radioactive dust, which has merged with our ordinary environments and landscapes, rendering them uncanny.¹¹ In Cordle's suggestive account, building on the work of Joseph Masco, the 'nuclear uncanny' entails 'a shivering of the precepts by which we understand our existence in the world', for that existence is now haunted by an impending but invisible slow-motion catastrophe.¹² Because of its combination of subjective experience with an acute awareness of the otherness of language as a social medium, poetry is particularly well equipped to register and make perceptible the nuclear uncanny. Moreover, Drew Milne observes that contemporary poets have developed strategies of 'nuclear implicature', which he describes as a 'mode of poetic parataxis in which modes of expression circle around some nuclear question, so as to evoke or suggest omissions and attitudes'.¹³ In many of the poems we discuss below, this nuclear implicature is evident in their techniques of elision or indirection, and in the reflexive emphasis they place on how the 'nuclear question' of Chernobyl's aftermath resists representation.

Two further critical concepts are pertinent to our discussion of Welsh poetry and nuclear power: 'slow violence' and 'hyperobjects'. As Rob Nixon explains, slow violence refers to those forces of ecological destruction whose effects are gradual or delayed and therefore difficult to perceive as violence, particularly in 'an age that venerates instant spectacle'.¹⁴ Consequently, any poetics of slow violence must attend to those after-effects that usually go overlooked and seek to render the imperceptible perceptible. Nixon discusses the Chernobyl event and its radioactive fall-out as examples of slow violence, noting both the 'series of time lapses' that marked its acknowledgement by Soviet officials and the process of 'toxic drift', whereby its effects migrated to adjacent and geographically distant territories.¹⁵ Another obvious way in which the slow violence of Chernobyl manifests itself is via the mind-bending longevity of the radioactive materials that the disaster released. For instance, plutonium-239, which occurs in spent nuclear fuel and is used to make nuclear warheads, has a half-life of 24000 years.¹⁶ The slow violence of such radionuclides demands that writers come to grips with what David Farrier calls 'our enfolding in deep time', for the global dispersal of radioactive fall-out is a key feature of the Anthropocene epoch.¹⁷

It is also possible to think of the radioactive plume that issued from Chernobyl as a hyperobject, in Timothy Morton's sense of the term. Firstly, hyperobjects are 'time-stretched' phenomena in the sense that they are composed of materials and processes that either originate in the ancient past (fossil fuels) or persist into the distant future (some radioactive isotopes). This 'temporal undulation' renders hyperobjects profoundly uncanny as well as difficult to comprehend.¹⁸ Secondly, hyperobjects are 'nonlocal' to the extent that they are at once intimately near to us and so vast as to make it impossible 'to locate them in a specific region of spacetime'.¹⁹ The nonlocality of Chernobyl's radioactive legacy is evident from the fact that winds, clouds and rain carried particles from the reactor in northern Ukraine across most of western Europe and beyond. However, as we argue below, Welsh poets both register the transnational character of the disaster and perceive it in ways that are keenly attuned to local, regional and national contexts. Indeed,

this entanglement of local and ‘nonlocal’ frames might be attributed to a third characteristic feature of hyperobjects, which is that their vast scale means that ‘we only see pieces of them at once, like a tsunami or a case of radiation sickness’.²⁰ Hyperobjects, such as the radionuclides dispersed around the planet by Chernobyl’s reactor explosion, can never be perceived in their nonlocal totality but only via their local, partial manifestations.

Nuclear-Free Wales

Prior to the Chernobyl disaster there was already substantial public opposition to nuclear facilities in Wales. During the early 1980s, the Campaign for Nuclear Disarmament (CND) protests against nuclear weapons production received strong support from Welsh nationalist politicians such as Gwynfor Evans, who ‘denounced the Trident missile as an “evil weapon which is a badge of British nationalism rather than a weapon of military defence”’.²¹ Political and cultural responses to nuclear power in Wales were also entwined with the country’s fractious relationship with the UK Government, especially during the crucial period between the 1979 devolution referendum and the Chernobyl disaster in 1986. For instance, Laucht and Johnes note that activists in CND Cymru raised money in support of the 1984-5 Miners’ Strike, ‘partly because of how overtly anti-government that strike was’, though they were also motivated by ‘an understanding that a strong coal industry undermined the need for nuclear power’.²² Writing somewhat earlier in the decade, the Welsh cultural theorist Raymond Williams urged socialist anti-nuclear activists to demonstrate ‘the real links between nuclear-energy and nuclear-weapons programmes’ as part of their wider campaign for disarmament.²³

During the early 1980s, Welsh county councils began to declare their ‘nuclear-free’ status, culminating in Wales being proclaimed ‘Europe’s first nuclear-free nation’ on 23 February 1982.²⁴ Such declarations entailed a commitment not to participate in the production or use of nuclear weapons; though this was perceived by some as an empty gesture. In Spring 1986, a *Radical Wales* editorial criticised Welsh councils for failing ‘to develop a real and positive strategy’ for de-nuclearisation, while decrying the UK Government’s ‘ruthlessness in dealing with peaceful protestors’ at anti-nuclear demonstrations.²⁵ Besides articles on a wide range of nuclear issues, *Radical Wales* regularly featured work by Welsh poets during the 1980s; and the Summer 1987 issue promoted a forthcoming volume of poems, *Poets for Peace / Beirdd dros Heddwch*, edited by Menna Elfyn and Nigel Jenkins.²⁶ The bilingual anthology, which features work by fifty-three poets, was published by CND Cymru and framed as a celebration of the ‘fifth birthday of Nuclear Free Wales’.²⁷ Its title, *Glas-Nos*, meaning ‘blue night’ in Welsh, puns on the Russian term ‘glasnost’, alluding to Mikhail Gorbachev’s new policy of openness in the USSR.

During the mid-1980s, ‘nuclear-free’ Wales was home to two nuclear power stations (Wylfa and Trawsfynydd), munitions factories at Royal Air Force (RAF) Caerwent and Royal Ordnance Factory (ROF) Cardiff and a US naval base at Brawdy, Pembrokeshire.²⁸ The latter three sites became focal points for anti-nuclear protesters, amongst whom were a number of poet-activists who recorded their experiences. For

example, Nigel Jenkins's poem 'Brawdy' describes a tense stand-off between protesters and military personnel during a symbolic 'march to the sea'.²⁹ In Peter Gruffydd's poem, 'Will There Be Tridents', a father struggles to explain the prospect of a 'Third World War' to his young son and laments the complicity of Wales in the UK's Trident nuclear missile programme.³⁰ Peter Finch also discusses the making of 'Trident's virulent tips' at ROF Cardiff and notes its significance as a 'local target for protests'.³¹

The construction of a nuclear bunker at Carmarthen also became a flashpoint for anti-nuclear protests and was a touchstone for several poets. Menna Elfyn's 'Chwarae Plant' ('Child's Play'), which contrasts childhood innocence with the 'bitter games' ('gêmau chwerau') played by adults, is dedicated to 'Siân ap Gwynfor a holl aelodau'r byncar' ('Siân ap Gwynfor and all members of the bunker').³² Jenkins also describes the diverse coalition of protesters at Carmarthen in his 'Demo Diary' for 1986: 'It's the usual mixture of Welsh all-sorts – Cymry Cymraeg, wild Sais from the hills [...] punks urban and rural, chapel respectables – all kinds, all ages'.³³ One of these 'chapel respectables' was the poet and former Anglican priest R.S. Thomas, who co-founded Dwyfor CND and was a regular attender of anti-nuclear rallies in his seventies.³⁴

The biggest UK anti-nuclear protest during the 1980s was the Women's Peace Camp at RAF Greenham Common, Berkshire, the site of a US Air Force base and its cruise missile silos. Notably, the peace camp had its origins in Wales: initially in the Carmarthen Anti-Nuclear Campaign group and subsequently in the ten-day march, organised by Women for Life on Earth, from Cardiff City Hall to Greenham that took place in August 1981.³⁵ After 'four women from Wales tied themselves to a gate', a camp was maintained at Greenham for nineteen years, becoming a global focus for feminist and anti-nuclear activism and stimulating other protests in Wales at Llanishen and Caerwent.³⁶ Several Welsh poets, including Menna Elfyn and Meg Elis, spent time at the Greenham peace camp and wrote poems in response, as did others less directly involved. Many of these poems couch their anti-nuclear, feminist and pacifist politics in the language and imagery of Christian religion. For instance, Elis's 'Duw yn Greenham' ('God in Greenham') imagines the divine Being as a sister-comrade, 'one of us' ('un ohonom'), whose voice rises 'with our songs round the night fire' ('efo'n caneuon rownd tân y nos').³⁷ Similarly, in Gwilym Jones's 'Glewion Comin Greenham' ('The Braves of Greenham Common'), female protesters are depicted standing 'in an unbroken circle' ('yn gylch di-fwlch') around 'Satan's castle' ('castell Satan') and suffering state violence in a manner that recalls the persecution of Jesus Christ.³⁸ The most sophisticated Greenham poems are Elfyn's 'Sul y Mamau yn Greenham, 1984' ('Mothering Sunday in Greenham, 1984') and 'Cennad Heddwch' ('An Envoy of Peace'), her elegy for Helen Wyn Thomas, who was killed at Greenham in 1989. In the former, the Greenham protests are described as 'a long song of altruism' ('cerdd hir o allgaredd') that 'belongs to everyone' ('perthyn i bawb'); while the latter depicts Thomas as 'the emblem / that works in us' ('hi yw'r arwyddlun / sy'n gweithio ynom'), an example to be followed rather than merely commemorated.³⁹ In these Greenham poems by Welsh writers, there is also a powerful articulation of what Cordle calls the 'politics of vulnerability', an acute consciousness that the dangers of nuclear disaster are compounded, rather than allayed by the British state's nuclear policies.⁴⁰

Chernobyl Poems

The engagement of Welsh poets with anti-nuclear campaigns during the early 1980s laid the groundwork for a significant cluster of creative responses to the Chernobyl disaster itself. A shared feature of these Welsh Chernobyl poems is their sensitivity to the transnational character of the event, in which both radioactive fallout and information flows crossed international frontiers, altering the relationships between peoples and places. As Ursula Heise remarks, the Chernobyl disaster ‘transforms the individual’s relationship to the local and deterritorializes the experience of place’, demonstrating how distant events can intervene catastrophically in the practice of everyday life.⁴¹ This situation is acknowledged in a 1986 editorial for *Radical Wales*: ‘We are connected by the air and the sea to the rest of the world – nowhere is safe from prevailing nuclear-laden winds’.⁴² The apprehension of invisible, airborne nuclear threats is a common motif in several Chernobyl poems. However, Welsh poets tend to resist the ‘dissociation from the local’ that Heise regards as characteristic of cultural responses to the disaster.⁴³ Partly because the radioactive fall-out from Chernobyl was concentrated in Gwynedd and Ynys Môn, near to Wales’s two nuclear power stations, the cultural and political response to the disaster in Wales was ‘enmeshed [...] with localised and historical concerns about the nuclear industry in Wales’.⁴⁴ Although it is rare for Welsh poets to make the links between Chernobyl and Trawsfynydd or Wylfa explicit, they are sensitive to the effects that radioactive poisons may have on rural, Welsh-speaking communities, which are marginal to the interests of the British state.

In its editorial for 9 May 1986, the Welsh-language newspaper *Y Faner* refers to ‘a cloud of fear’ (‘cwmwl o ofn’) that has settled over Wales and much of western Europe. In doing so, it translates an actual meteorological phenomenon – the clouds that carried radioactive particles from Ukraine to north Wales – into a powerful metaphor for the psychological effects of Chernobyl. This cloud is fearful because the poisons it bears are invisible and imperceptible. To ward against them and the fear they cause, greater transparency is essential: ‘People have to be made aware that there are dangers involved with the nuclear industry, for all the advantages that it also brings’.⁴⁵ Gerwyn Williams’s poem ‘Cysgodion Chernobyl’ similarly alludes to the dark ‘shadows’ (‘cysgodion’) cast by Chernobyl’s metaphorical cloud of fear; but the poem also attempts to imagine the real effects of its fall-out in Wales via an extended parallel with an earlier nuclear event, the US bombing of Hiroshima on 6 August 1945:

‘Welwn ni mo’n Hiroshima ni.	We don’t see our Hiroshima.
Ydi’i lwch ar ein corn-fflêcs a’n llaeth?	Is its dust on our cornflakes and our milk?
A wlychwyd ein plant	And were our children soaked
yn y gawod ymbelydrol?	in the radioactive shower?

The initial statement in these lines identifies a failure of perception, which gives rise to a series of anxious questions concerning the extent to which everyday life – breakfast, children playing – has been poisoned by radionuclides in that most ordinary feature of the Welsh weather, rain. Where the destruction of Hiroshima by an atomic bomb was immediately, devastatingly obvious, Williams suggests that the slow violence of Chernobyl in Wales – ‘ein Hiroshima anweledig ein hunain’ (‘our own invisible Hiroshima’) – is all the more disturbingly uncanny for being hidden from the senses and unfolding gradually.⁴⁶

Williams’s poem gains some of its force from its sustained intertextual dialogue with James Kirkup’s ‘No More Hiroshimas’, and several other Chernobyl poems by Welsh poets also approach their subject-matter via allusions to other texts. Christine Evans’s ‘Small Rain’ extends this practice to the framing of the poem, which describes a poetry class interrupted by a rain shower from the perspective of the teacher. More so than ‘Cysgodion Chernobyl’, this is a poem of nuclear implicature, eschewing direct statements and allowing the sinister connotations of the rain to reveal themselves only gradually and partially. The reader’s perceptions are mediated by those of the ‘dozen women’ who gaze at the falling rain through an open window ‘as though not one of us had realised / the world could go on glistening / poisoned’. Evans’s deft use of enjambement strategically delays the reader’s own realisation that the Welsh landscape is being poisoned at the same time as it is watered and revitalised. That ‘the world could go on glistening’ in the midst of a nuclear disaster underlines both the insidiousness of the radioactive poisons it released and the aesthetic dilemma faced by the poet: how to acknowledge the ecological damage wrought by Chernobyl while continuing to register the beauty of the natural world. This is a dilemma that the poem thematises via its speaker’s reflections on the class that has been temporarily disrupted, for she recalls teaching her pupils ‘rain-as-symbol: / fertility, wholeness, healing, grace. / Larkin’s arrow-shower. Heart’s-ease of tears’.⁴⁷ Each of these positive symbolic associations is subtly ironised but not wholly erased in the course of the poem, implying the need for a new hermeneutic capable of perceiving both the regenerative properties of the rain and its slow violence without resolving the tension between them.

Rain, wind and weather fronts also occupy a prominent place in Gillian Clarke’s ‘Neighbours’, though Clarke employs the trope of bird migrations to render the nonlocality of the disaster apprehensible to her readers. Adopting first-person plural pronouns and a panoramic perspective that takes in most of northern Europe, Clarke’s speaker describes song-thrushes dying over Finland and poisoned milk in Poland before narrowing the focus abruptly to show the effects of radioactive fall-out in north-west Wales:

This spring a lamb sips caesium on a Welsh hill.

A child, lifting her face to drink the rain,

takes into her blood the poisoned arrow.

As a result of both human activity (nuclear fission) and natural processes (wind and rain), Wales is implicated in the wider European and global event that has its epicentre in

northern Ukraine. Indeed, this process of implication – twining or twisting together – occurs at the physical level, for both Welsh lamb and Welsh child take the caesium from Chernobyl into their bodies, just as its ‘poisoned arrow’ penetrates the landscape that they inhabit. However, in the following stanza Clarke’s speaker describes this process of radioactive contamination in terms of relationships, a new awareness of ‘neighbourly’ interdependence, so that ‘each little town / in Europe’ is ‘twinned to Chernobyl’. The shared experience of vulnerability to nuclear disaster becomes the basis of an empathetic identification on the part of the speaker and the larger Welsh collective for whom she speaks, a relationship with those harmed or killed at Chernobyl. This identification is also figured in linguistic and cultural terms in the final lines of the poem, where the Russian word ‘glasnost’ – meaning ‘openness’ – is creatively mistranslated as the Welsh phrase ‘golau glas’ (‘blue light’). The two are then fused in an English phrase that connotes both day-break and a change in the political weather: ‘a first break of blue’.⁴⁸

The strikingly hopeful ending of ‘Neighbours’, which swerves away from the reality of nuclear disaster to imagine a post-Cold War future, can usefully be compared with the darker vision of Einir Jones’s ‘Eryri wedi Chernobyl’ (‘Snowdonia after Chernobyl’). In place of the blue light of dawn, the final lines of Jones’s poem describe ‘hills / on fire again / in the night’s blackness’, mountain pastures contaminated with the invisible ‘fire’ of ionising radiation.⁴⁹ Moreover, where Clarke’s poem foregrounds the geographical and meteorological connections that link Wales to northern and eastern Europe, Jones exemplifies what David Farrier calls ‘thick time’, the lyric poem’s ‘capacity to put multiple temporalities and scales within a single frame’.⁵⁰ She does this by placing lines depicting the geological formation of Eryri (Snowdonia), a mountainous region of north-west Wales, in apposition with others that evoke the explosion at Chernobyl and its aftermath. Consequently, images of mountains melting and cooling in the deep past find their uncanny echo in a reactor meltdown that has created its own deep future: ‘Far down the centuries / there’s the other melting’.⁵¹ This ‘melting’ is also a poisoning, for, like Clarke and Evans, Jones imagines the wind rising and carrying radionuclides from the damaged reactor in Ukraine through the atmosphere to north Wales, where they mix with rain and fall silently to earth: ‘And the poison / quietly / descending’.⁵² However, where Clarke’s ‘Neighbours’ finds a means of representing the nonlocality of Chernobyl’s fall-out plume – its collapse of the distinctions between near and far – Jones’s poem is more concerned to render its time-stretched character in words and images, linking the geological processes of the deep past to the deep future of radioactive contamination in Eryri.

Welsh Poetry and Nuclear Power

In the aftermath of the Chernobyl disaster there was a perceptible shift in the ‘nuclear’ poetry of Wales. While Wales’s nuclear bunkers and military facilities were the focus of many poets during the early 1980s, and the Chernobyl disaster stimulated a cluster of poetic responses to radioactive fall-out in north Wales, during the late 1980s the nuclear power stations at Trawsfynydd and along the Severn estuary became foci for anti-nuclear poetry. More recently, following a major nuclear accident at the Fukushima Daiichi plant in Japan on 11 March 2011, Wales’s last operational nuclear power

station, Wylfa, also entered into poetic representation via the ‘Power in the Land’ arts project in 2014.⁵³ As Philippa Holloway remarks, the artists and writers who participated in this project acted as ‘archivists of the site, preserving for us a significant chapter in the UK’s nuclear story.’⁵⁴

One of the more striking features of these poems is their preoccupation with the sheer uncanniness of nuclear architecture. For instance, in Peter Gruffydd’s ‘Visiting the Site’, Trawsfynydd’s distinctive twin towers are described as ‘square, blind, / concrete and squat / like petrified giant toads’, lines that splice Brutalist aesthetics with images drawn from folklore and fairy tales. This surreal transmogrification of towers into toads is extended further in a later stanza, where the speaker’s eyes are drawn to ‘two ventilators or filters’ that ‘sprout from each block, like horns’. The building itself here seems to manifest physically the evil that lurks within it; and the infernal character of the building is underlined by Gruffydd’s description of it as ‘this angular hell’. The speaker’s hostile response to Trawsfynydd becomes more comprehensible when he mentions a protest at the plant’s gates, held ‘on Tschernobyl’s / anniversary’.⁵⁵ Martin and Wiliam note that, in the months and years following the Chernobyl disaster, environmentalists and anti-nuclear campaigners in Wales emphasised ‘Trawsfynydd’s potential as a site for an international calamity’, and Gruffydd’s poem adopts a similar rhetorical strategy.⁵⁶ Crucially, though, the poem transcends such political rhetoric to reflect on the damage that nuclear accidents such as Chernobyl inflict upon language itself: ‘What language wells, grows, / in a mouth filled with earth, hot ash?’ The problem of finding words to describe nuclear disaster is further complicated by the bilingual condition of Wales, for, as Gruffydd’s Anglophone speaker makes clear, Welsh is the language spoken by the protesters at Trawsfynydd.⁵⁷

Like Gruffydd, Einir Jones conflates the actual disaster at Chernobyl with the potential for catastrophe at Trawsfynydd in ‘Atomfa’ (‘Nuclear power station’), a poem that also depicts the power station as a malevolent, sentient being. Here, the building is figured as a slumbering ‘giant’ (‘cawr’), an embodiment of ‘modern orderliness’ (‘Trefnusrwydd modern’) that, paradoxically, resounds with a cataclysmic ‘black song’ (‘ryferthwy ei gân ddu’).⁵⁸ This sinister ‘song’ powerfully suggests the damaged reactor at Chernobyl ‘spewing invisible clouds of radiation into the air’.⁵⁹ There is an uncanny contrast, then, between the order and technical efficiency of the power station and the echoes of destruction and radioactive poisoning that taint its immediate surroundings in the upland moors of Eryri. This pollution is manifest in the sickly magpie that flies past ‘from the plutonium hills’ (‘o’r bryniau pliwtonium’) and in the symbolically apt fog that envelops the landscape:

Niwl,	Fog,
niwl yr anwybod.	the fog of the ignorant.
Cysgod yr anlwc a’r anras	The shadow of misfortune and disgrace
yn glir yn y niwl. ⁶⁰	is clear in the fog.

Clarity and obscurity are conflated in these lines: the fog itself connotes ignorance of the potential dangers of nuclear energy production in Wales, but it also somehow makes tangible the shadows of radioactive contamination that are already present. In this way, Jones's poem imaginatively dissolves the distance between North Wales and northern Ukraine, depicting Trawsfynydd as an echo of Chernobyl.

Where Trawsfynydd's Brutalist concrete towers are conspicuous in the mountains of Eryri, Wylfa keeps a lower profile on the coast of Ynys Môn. For instance, while Phil Bowen's 'The Wired Lines' alludes to the recycling of 'radioactive waste' at the site, it also notes that Wylfa's architecture is deceptive or confusing: 'As baffling camouflage within lichen slates / Slots into a stained landscape'.⁶¹ In these lines, the power station has both 'stained' or contaminated the Welsh landscape and merged with it, baffling both the poet and the reader in the process. This awareness of the building's sinister ability to blend into its surroundings is developed further in Alys Conran's 'Monologue in A', where Wylfa describes itself as a 'power station posing as a pebble / dressed in the colour of rockpools'.⁶² The teasing, flirtatious tone that Conran's Wylfa adopts in these lines calls the reader's attention to the ways in which the nuclear industry has sought to disguise the risks associated with reactors and the radioactive waste they produce through discursive sleights of hand. What these examples illustrate is an important difference in the ways in which Wales's two most prominent nuclear structures are typically represented: for, if Trawsfynydd is unavoidably, even offensively visible, then Wylfa is figured in terms of its camouflaged invisibility.

While Wylfa's inconspicuousness is treated with suspicion by Bowen and Conran, Peter Finch casts his paranoiac eye over a cluster of power stations across the Bristol Channel in England: Hinkley Point, Oldbury and Berkeley. In 'Three a.m.', Finch's speaker is woken in the early morning and struggles to identify the likely sources of the noise: an 'airgun', 'a house collapsing', 'the steelworks or the shunting yard'. Dismissing each of these explanations, the speaker's sleep-deprived mind drifts to Hinkley, imagining that the power station is on the move: 'Hinkley Point is 18 miles off across the channel. / It said 15 in last night's paper. / It's getting closer'.⁶³ Here, Hinkley Point is rendered as a mobile object, as if its radioactivity imbues it with agency. It is also depicted as a potentially invasive entity that threatens Wales from without. In 'Severn Estuary ABC', Finch's speaker is similarly preoccupied with the nuclear facilities along the Bristol Channel, assuming an attitude of tense vigilance: 'B binoculars I'm using / C across the water. Largest concentration'. On the whole, though, 'Severn Estuary ABC' is less paranoid than 'Three a.m.' and more concerned with the insidious cultural influence of nuclear power. For instance, Finch mimics and mocks the promotional literature of the nuclear industry: 'M is the mighty atom. / N for no trouble in Oldbury, Hinkley Point, Berkley [sic]'. Two years after the Chernobyl disaster, Finch's speaker also seems more concerned by the mundane hazards of nuclear waste than by reactor explosions or fall-out. 'Severn seeped solid. Sold down the river' alludes to radioactive materials leaked into the River Severn; and the final lines of the poem reinforce this minatory awareness of environmental pollution: 'X marks the spot. The insidious ingress. The cancer'.⁶⁴

R.S. Thomas and Robert Minhinnick

Perhaps the most profound poetic responses to nuclear power and its dangers occur in the work of R.S. Thomas and Robert Minhinnick, two leading figures in the Anglophone literature of Wales. Although neither poet wrote directly in response to the Chernobyl disaster, Thomas and Minhinnick each display a pervasive concern with the environmental and political effects of nuclear contamination. At times, this is evident at the level of theme and content; at others it is manifest in the language and imagery that the poems employ while ostensibly speaking of other things. In their different ways, Thomas and Minhinnick each illustrate Drew Milne's point that 'nuclear reference is rarely the only register or semantic field of a nuclear text or poem'.⁶⁵ For Thomas, the other key 'semantic field' of his late poetry is theology, so that many of his explorations of the nature of God and the meanings of Biblical narratives are entangled with his more earthly preoccupations as an anti-nuclear campaigner and resident of North Wales. In Minhinnick's case, a recurrent fascination with the properties of radioactive materials often infuses his poetic reflections on war (especially the Gulf War and the Iraq War) and his native patch of the South Glamorgan coast.

Thomas began his career as an anti-nuclear activist relatively late in life, following his retirement as vicar of Aberdaron in 1978. As Byron Rogers observes, the 1980s were Thomas's 'public years', both as a leading figure in Welsh-language politics and as a founding member of the Dwyfor branch of CND.⁶⁶ Justin Wintle notes that the anti-nuclear movement appealed simultaneously to his pacifism, his 'antipathy towards modern technologies' and his deep 'environmental concern'.⁶⁷ Thomas also makes a connection between his Welsh nationalist politics and anti-nuclear activism in his prose memoir, *Neb* ('No-one'), describing Wales as 'a small peaceful country' that remained 'in danger of being dragged into another of England's wars' as a result of the 1536 Act of Union.⁶⁸ Indeed, Thomas's work exemplifies the wider convergence that Laucht and Johnes identify between 'the nuclear question in Wales' and 'fears around the endangered cultural, political and economic status of the nation within the UK' during the 1980s.⁶⁹ Throughout this pre-Chernobyl phase – *Neb* was first published in Welsh in 1985 – Thomas is chiefly preoccupied with the proliferation of nuclear weapons in a secular, technological society, noting the increasing prominence of 'the machine and the nuclear bomb' in his poetry of this period.⁷⁰ However, even before the Chernobyl disaster, he was already keenly aware of the threat posed by 'nuclear energy with all its problems and temptations', not least because of the proximity of Trawsfynydd and Wylfa to his home in Y Rhiw on the Llŷn Peninsula.⁷¹

Thomas's nuclear poetics has its origins in the early 1970s and is closely connected with the mythos of the Machine that is introduced in his 1972 volume *H'm*, embodying the inner logic of a rapacious techno-capitalism. As Wynn Thomas remarks, the Machine 'epitomised everything he feared, hated and despised about a modern world forcibly maintained by destruction'.⁷² It is not surprising, then, that Thomas should regard nuclear weapons as a particularly virulent expression of the existential threat posed by the Machine and its culture. In 'The Hearth', for example, he rewrites W.B. Yeats's 'The Second Coming' for a post-nuclear world, imagining 'statesmen / And scientists'

slouching towards ‘a new Bethlehem’ with ‘their hands full / Of the gifts that destroy’.⁷³ A later poem, ‘Reply’, reworks this idea of a post-apocalyptic Epiphany further by replacing the Magi with deadly radionuclides released during a nuclear war: ‘Before what cradle / do the travellers from afar, / strontium and plutonium, hold out / their thin gifts?’⁷⁴ Both of these poems radically ironise the idea that nuclear fission is the ‘gift’ of science to humankind, figuring it instead as a pervasive source of evil in the modern world.

In *The Echoes Return Slow*, the first book that Thomas published following the Chernobyl disaster, he describes himself as a kind of poet-scientist, ‘composer of the first / radioactive verses’.⁷⁵ The ‘radioactive’ character of Thomas’s verse is particularly evident in his later religious poetry, where the intangible presence of radionuclides in the environment offers a parallel through which the silence and elusiveness of God might be thought. For instance, in ‘Nuclear’ God’s creative ‘word’ is ‘explosive’, like an atomic bomb, and its ‘fall-out’ is ‘endless’.⁷⁶ However, when he re-imagines familiar Biblical narratives, Thomas tends to draw upon metaphors associated with nuclear power production rather than nuclear weapons. In ‘Afallon’ the myth of the Fall is reconfigured so that Adam’s and Eve’s apple becomes ‘the nuclear / fruit with the malignant core’, an image that inevitably recalls the damaged reactor at Chernobyl leaking lethal doses of radiation into the atmosphere.⁷⁷ In a subsequent poem, ‘The Waiting’, this analogy is developed further by depicting the consequences of Adam’s and Eve’s original sin as a form of radiation sickness that is endemic to humankind as a whole:

We have eaten of a tree
 whose foliage is radioactive
 and the autumn of
 its fall-out is upon our children.⁷⁸

In these images of radioactive fruit and foliage and a natural environment contaminated with long-lasting fall-out, it is possible that Thomas is again alluding to the Chernobyl disaster, which polluted trees and crops in the area around Pripyat with toxic levels of radiation.⁷⁹ For Michael Marder, Chernobyl is best understood as ‘an outcome of the still incomplete process of human alienation from our environmental milieu’.⁸⁰ In his ‘radioactive verses’, Thomas is as much concerned with the repercussions of this environmental crisis as he is to re-examine the meanings of its Biblical archetype, the expulsion from Paradise.

Like Thomas, Minhinnick has a long history of environmental activism that intersects with his work as a poet. In 1984, he co-founded Friends of the Earth Cymru and, subsequently, Sustainable Wales, a charity that promotes sustainable living. By comparison with Thomas, however, Minhinnick’s nuclear verse is both more secular and more self-consciously international in scope. While retaining a persistent focus on his home ground of Porthcawl in South Wales, Minhinnick’s poetry is informed by visits to contaminated

sites on several continents, particularly in North America, Eastern Europe and the Middle East. Furthermore, Minhinnick explores the history and physics of radiation, writing creation myths for several radioactive isotopes and considering the mysterious subjectivity of the atom.

These tropes of contamination and radioactive subjectivity come together memorably in Minhinnick's poem, 'An Isotope, Dreaming', where the speaker's human self is progressively merged with that of an isotope of uranium decomposing through its half-lives. The poem begins in Trecco Bay caravan park at Porthcawl but rapidly expands to consider a range of other landscapes, including uranium mines in Arizona, the warzones and ancient ruins circling Baghdad and a region of southern Belarus near the site of Chernobyl. Early in the poem, its speaker remarks that 'Resurrection / is in the reactor', an insight he claims to have 'learned' from 'the iron womb of Sellafield', 'the cubist monument of Trawsfynydd' and 'the accelerator tunnel at Berkeley'. He also mimics the discourse of nuclear scientists when declaring that 'the paradise particle will some day be revealed'.⁸¹ Held in tension with such hubris and the sometimes puckish voice of the dreaming isotope is a profound but only half-conscious awareness of the threat that invisible, ubiquitous radiation poses to living things. This threat takes multiple, mutating forms over the course of the poem: the uranium-laced 'dust' of northern Arizona that is 'in the earth under my nails and the fillings in my teeth'; the contaminated munitions used by US troops, which have 'translated uranium's Koran' in the chromosomes of Iraqi children; and the uncanny shapes of 'Chernobyl mushrooms / arching their madness' in graveyards, gardens and at roadside stalls.⁸²

Minhinnick's poems demonstrate a serious engagement with nuclear science and a willingness to understand what drives its advance, in spite of its clear dangers. Several of his poems explore the subjectivity of radioactive materials, giving them distinctive lyric voices. For example, 'Elementary Songs' is a list poem of chemical elements presented in the order of their appearance in the periodic table, including several radioactive isotopes. Some are listed for their rarity, such as francium, which has a half-life of only two minutes: 'vanished from this world / Before thought ever was'.⁸³ Other elements are more notorious for their use in nuclear weapons. The verse on uranium suggests that 'God was ashamed. / He hid his secret / under the Black Mesa / Until Mr Oppenheimer arrived'. Similarly, 'Plutonium', used in the bomb dropped on Nagasaki in August 1945, 'lie[s] / In a darkened room', lamenting that it 'must never go out again'.⁸⁴ In each case, the poet-speaker briefly inhabits the subjectivity of an inorganic element as though it were a sentient being before undergoing a further mutation and appearing as something else.

There is a delicate balance in Minhinnick's verse between the value of scientific discoveries and the seemingly inevitable catastrophes that ensue from them. A recurrent motif in Minhinnick's poetry is the nuclear contamination of human bones. Such anxiety is well founded: as a result of nuclear testing, the average amount of plutonium in the human body is five times higher than levels prior to 1945.⁸⁵ This aspect of our post-nuclear condition troubles several of Minhinnick's speakers, particularly in 'An Isotope, Dreaming', where the contaminated dust that follows the speaker from the uranium mines of the Black Mesa plateau finds its way into everything and everyone:

It's in the water I drank and the mesquite I chewed.

And from now it's in my words and they will never let it out

Because words are the green bones that we bend to make a child.⁸⁶

There is an explicit connection in these lines between the fixing of radioactive isotopes in human bones and the contamination of the poet-speaker's 'words', so that acts of poetic creation and reproductive procreation are equally polluted by uranium mining. Later in the poem, Minhinnick describes the uncanny effects of depleted uranium munitions, used by the US military during the Gulf War, on the bodies of Iraqi children: 'In their bones a ghost / was grinning'.⁸⁷

Minhinnick redirects the reader's attention towards radioactivity in the natural environment in two botanical poems, 'The Orchids at Cwm y Gaer' and 'The Ghost Orchids of Berdun'. In the former, the speaker discovers orchids growing in the dunes near Porthcawl and imagines that they are 'uranium rods / broken through from the terrible core'. This striking metaphorical correlation between botanical 'eruptions' and the melt-down of a nuclear reactor core is strongly suggestive of the Chernobyl disaster, which provides images and icons for contemporary myth-making. Indeed, the orchids themselves are perceived as strange new 'gods' via the prism of nuclear catastrophe: 'Their alpha-love kissing our skin / Their gamma-love passing through our bones / To leave their ghosts forever hidden in our chromosomes'.⁸⁸ A companion poem, 'The Ghost Orchids of Berdun' focuses on the annual life cycle of ghost orchids but again associates the flowers with radioactivity in the environment. The orchids are described as 'the daughters of ghosts' that had 'given birth to ghosts', phrasing that both alludes to the physics of radioactive decay (daughter isotopes) and reprises the depiction of radionuclides as 'ghosts' haunting human and non-human bodies.⁸⁹ Moreover, in a striking turn of phrase the speaker declares that: 'They root like plutonium / in the bone'.⁹⁰ Through this charged simile, Minhinnick further compounds the convergence of ecological and nuclear themes that characterises much of his poetry during the early twenty-first century, exploring the entanglements of humans, plants and inorganic elements in a post-nuclear age.

Conclusion

Jeff Hughes argues persuasively that there is no one British nuclear culture; rather there are 'many nuclear cultures, in many contexts'.⁹¹ The purpose of this article has been to recover and critically examine a neglected expression of nuclear culture within the context of 1980s Britain, one that challenges both dominant narratives of a homogeneous 'Britishness' and the tendency of scholars to focus primarily on nuclear weapons. As we have shown, a significant number of Welsh poets active during the 1980s combined their creative practice with anti-nuclear activism in a political conjuncture where nationalist, pacifist and environmentalist movements converged. For many of these poets, the explosion at Chernobyl was experienced as a defining moment, following which their attitudes

towards nuclear power production in Wales and beyond were irrevocably changed. In turn, their poems give expression to a larger shift in public opinion within Wales during the late 1980s and 1990s, whereby nuclear power production became the focus for a distinctive politics of vulnerability. Some poems document or imagine the effects of Chernobyl's fall out in North Wales, whereas others direct their attention to power stations located in or near Wales: Trawsfynydd, Wylfa and Hinkley Point. The aftermath of Chernobyl also finds profound responses in the poetry of R.S. Thomas and Robert Minihinnick, neither of whom engage with the disaster itself directly. Nonetheless, their later poems are frequently pervaded by nuclear tropes and images, while their shared thematic concerns with radiation are closely connected with their environmental activism.

The texts that we have considered in this article are part of a larger body of 'nuclear literature' that flourished during the 1980s and often had important affinities with 'the discourses of anti-nuclear groups'.⁹² Many of the Welsh poets we have discussed were committed members of groups such as CND, participated in anti-nuclear protests and published their work in political magazines such as Plaid Cymru's *Radical Wales*. Crucially, Welsh nuclear poetry was a bilingual phenomenon and even English-language poets such as R.S. Thomas and Peter Gruffydd were active in Welsh-language campaign groups. The ways in which Welsh poets mediated nuclear issues were inflected both by devolutionary politics in the aftermath of the unsuccessful 1979 referendum and the rise of environmental activism during the 1980s. They were also informed by international events, such as the advent of neoliberalism under Margaret Thatcher and Ronald Reagan, Mikhail Gorbachev's new policy of glasnost in the USSR and – most importantly – by the Chernobyl disaster and its long-distance effects. The contamination of areas of North Wales by radioactive isotopes from Chernobyl's damaged reactor fundamentally altered public perceptions of Wales's domestic nuclear power plants Trawsfynydd and Wylfa. As we have sought to show, Welsh poets not only reflected this process but also contributed to it through their published work.

The 1980s are a crucial decade for thinking about nuclear culture, in Wales and elsewhere, but the economic and political importance of nuclear power has altered significantly over the past four decades. Where nuclear power supplied 17.5% of global electricity at its peak in 1996, it now provides just 10% and aging plants are increasingly being decommissioned.⁹³ In Wales, nuclear power currently accounts for 0% of the country's electricity generation, following the closure of Trawsfynydd in 1991 and the decommissioning of Wylfa in 2015.⁹⁴ Nonetheless, the cultural effects of nuclear power production persist long after the facilities themselves have been shut down just as the environmental consequences of nuclear infrastructure and waste management will unfold for centuries to come. This is one reason why a better understanding of nuclear cultures in Wales during the late twentieth century is relevant to our contemporary moment. This is because, nuclear power takes on new significance when considered as one element of the global transition away from fossil fuels and towards renewable forms of energy generation. Some commentators on the Left argue that nuclear power is essential to such a transition whereas others consider that the risks associated with

nuclear plants and their waste are too high.⁹⁵ Such debates might be clarified by a more detailed grasp of nuclear cultures of the recent past. By offering ways of making perceptible invisible threats to life and the environment, by thinking across national borders and by encouraging us to think in terms of deep time and slow violence, Welsh nuclear poetry of the 1980s and 1990s has much to say to readers in the early Anthropocene.


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