Bastard Rock, Bastard Landscapes: On Heritage Boundaries, Relationality and the Exclusion of Industry in Northwest Wales

Alexa D. Spiwak
Department of Archaeology, Conservation and History, University of Oslo
a.d.spiwak@iakh.uio.no

Abstract

Inspired by a type of quarrying waste nicknamed “bastard rock”, this paper uses the concept “bastard” as an analogy for industrial heritage landscapes: conceptually and physically difficult, inherently hybrid and comprised of contested lineages and inheritances. Advocating for relational landscape approaches in heritage management, this paper also addresses the exclusion of active industry from UNESCO World Heritage cultural landscapes and buffer zones, using the case study of Penrhyn Quarry in The Slate Landscape of Northwest Wales as an example of when “one-size-fits-all” heritage management strategies risk diminishing the cultural heritage they seek to preserve for future generations.

Keywords: industry, heritage, boundaries, UNESCO, slate, landscape
Introduction

The material of Gwynedd County, Wales’s industrial past has a life of its own (Figure 1; for a more detailed map of sites mentioned, see Figure 5, below). Waste rock has found its way onto and into nearly every hill, crevice and home, continuing a long tradition of dispersal. Everywhere one looks, there is slate: remnants of inclines interrupt the soft contours of rolling hillsides with harsh vertical lines, while railroads and dried-up waterways snake along hilltops and valley bottoms – ribbons of grey, purple and blue stone that trickle out from the quarries like rivers, connecting them to lakes and seas. While the intended end product was roof tile, the slate industry primarily produced waste: one tonne of slate tiles resulted in anywhere from nine to 30 tonnes of waste rock, dumped in heaps by labourers known as “badrockmen” or “tipmen” (Gwyn 2015, 53). The resulting waste tips range in form from tidy benches which mimic the stepwise progression of their parent galleries to forking tendrils reminiscent of lava flows, their rounded edges

resembling something more liquid than solid (see Figure 2, below). Others take on the contours of hills and mountains, seemingly natural from a distance if not for the relative lack of vegetation. Vernacular structures built from waste rock are also a common feature, with blast shelters (a refuge when blocks were extracted using black powder), trimming sheds (gwaliau) and small messhouses (cabanau) built along plateaus and galleries. These unique landscapes are the result of over two hundred years of slate quarrying and mining – entire hillsides painstakingly carved into benches and mountains turned inside-out, their contents scattered across the countryside.

All this stone came from several high-quality slate veins which run northeast–southwest across Gwynedd County. A metamorphized form of mudstone, slate can be split into fine sheets due to its unique cleavage properties, making it a favourable roofing and building material. The slate industry of Northwest Wales made use of three main geological deposits: one of Cambrian age in the north, and a set of Ordovician veins further south. The secondary mineral compositions of each vein means that an experienced eye can pinpoint a slate’s origins, sometimes down to its parent quarry: softer, fine-grained stones in hues of purple, red, green or blue tend to come from the Cambrian deposit, while Ordovician slate is often harder, coarser and primarily grey, grey-blue or black. Veins of slate are often sandwiched by strata of sedimentary rock, layers known as “the hard”, which were often removed by blasting and carted away to the tips along with low-quality or shattered slate (Isherwood 2014, 25). At the horizon where sedimentary and metamorphic meet is a third type of stone, a hybrid given the nickname of “bastard rock” (Gwyn 2015, 51). Although technically classified as slate, it possesses qualities of both mineral types, making it brittle and liable to shatter when split. Frequently considered to be of too little value for the effort required to work it, bastard rock was also carted off and dumped over the tip. Assuming a best-case product-to-waste ratio of 1:9, over 4.3 million tonnes of waste rock were deposited during the peak year of 1898 alone.

It was the global demand for building material during the Industrial Revolution that led to the large-scale exploitation of these deposits, and the small leases which were quarried for local use were amalgamated into massive ventures, the largest being Penrhyn Quarry. Founded in the late eighteenth century, Penrhyn grew to become the largest and most productive slate quarry on Earth; its establishment, alongside hundreds of other smaller but equally as impressive quarries, radically transformed Wales over the following 200 years (Lindsay 1974, 26; Jones 1981, 15). Increasing urbanization, massive infrastructure projects, health crises, bitter labour disputes and the fight to preserve the Welsh language and culture all became part of the industry’s history (for an in-depth discussion, see Jones 1981). In honour of this legacy, six areas of Gwynedd County were inscribed as a cultural landscape on UNESCO’s World Heritage List (WHL) in 2021 under the title of The Slate Landscape of Northwest Wales (SLNW). In total, the new heritage landscape covers an area of 3258 ha, including the major quarry complexes and waste tips of Penrhyn, Dinorwig, Dorothea, Blaenau Ffestiniog, Gorseddau, Prince of Wales and Bryneglwys.

One of the primary challenges with such heritage landscapes is the delineation of boundaries, a necessary component of every heritage management policy. This very practical act, though seemingly innocuous, is not only bureaucratically complicated but...
also laden with political and conceptual challenges, especially within living landscapes: Where does the heritage “end”? What is worthy of designation, and what falls outside of the realm of protection? What portions of the landscape meet the UNESCO criteria of Outstanding Universal Value (OUV) – and why? While such questions permeate discussions of all heritage sites, the unique properties of waste landscapes add an extra layer of complexity.

The maps which resulted from meetings with landowners, government committees, quarrying companies and UNESCO’s own consulting bodies are comprised of oddly shaped but precisely defined areas which have been deemed to be “sufficient” in their representation of the property’s OUV (ICOMOS 2021; see Figure 5, below). While tidy on paper, the reality is less clean-cut: the material culture of Welsh quarrying leaches out over borders delineated on a map, and the waste which has resulted from over two hundred years of extraction continues to be a lively presence in the landscape. Moreover, the boundaries chosen not only exclude the ongoing practice of the traditional industrial techniques UNESCO lauds as having OUV but, I argue, also run counter to their own calls for sustainable development and relational approaches to heritage landscape management (UNESCO 2015). Using Penrhyn Quarry as a case study, this article aims to contribute to discussions surrounding Anthropocene waste landscapes and heritage (e.g. Olsen and Pétursdóttir 2016; Gardner 2022; Venovcevs and Bangstad 2022) through a critical examination of the policies and politics of mapping heritage boundaries, the use of relational landscape approaches and the exclusion of industry from WHL properties.

FIGURE 2. Gorseddau Quarry, part of SLNW Component Part 4, which operated for only 60 years before its closure in 1867. The quarry itself is visible in the centre, with tips and relic structures on either side (© Crown copyright: RCAHMW, reproduced with permission).
addressing the topics of inheritance and authenticity through the use of “bastard rock” as an analogy for Gwynedd’s unruly landscapes of slate waste.

**Heritage, Lineage, Legitimacy: “Bastard” as Analogy for Landscape?**

The word “bastard” entered medieval English from Old French sometime in the thirteenth century; originally, it may have referred to a child born of a socially unequal relationship, but it was more popularly used in reference to children born out of wedlock, particularly in contexts of nobility (Bladen 2019). From the fourteenth century onwards it was used as an adjective to describe something of mixed origin or lacking in authenticity or legitimacy, and from the seventeenth century the noun became a term of abuse (Harper 2022). “Bastard” became increasingly offensive throughout the twentieth century, used to describe both objects and people who were annoying, difficult or insensitive (Bladen 2019). As such, using the term in reference to heritage landscapes may seem crass, but it is applied here in the same way it is applied to its geologic counterpart: to describe something not only difficult to work with, but also as something inherently hybrid, a joining of two lineages which have converged to birth something new. The pedigree of The Slate Landscape of Northwest Wales can be traced through industrial extraction on the one side and the process of “heritagization” (Doyon and Carbonell 2019, 90) on the other. The result of these two bloodlines, an industrial heritage landscape, must therefore contend with both these legacies.

“Bastard” invokes not only discussions of lineage, but also the related topic of inheritance. “Heritage”, derived from the Old French *eritage*, was originally used as a legal term to define that which was bequeathed to a descendant after an ancestor’s death (Graham et al. 2000, 1). While modern definitions of heritage vary widely, many pick up on this theme of bequeathing or inheriting: “heritage is formed in the present and reflects inherited and current concerns about the past” (Harrison 2013, 14); heritage “links us with ancestors and offspring” (Lowenthal 1998, xiii); heritage “is our legacy from the past […] and what we pass on to future generations” (UNESCO 2022). Heritage, not unlike the noble blood lineages of old, is valued for its legitimacy or authenticity, defined in the Nara Document on Authenticity as “the degree to which information sources about [heritage] values may be understood as credible or truthful” (UNESCO 1994, Paragraph 9). In this sense, the “bastard” analogy provides a springboard for several ongoing discussions surrounding heritage landscapes: which imagined past are we preserving (e.g. Lowenthal 2015), and for whom? Who has a right to the inheritance of global heritage, and what is it that is left to be inherited by future generations, whether intentionally bequeathed or not?

These contestations of inheritance, lineage and legitimacy are all present within Gwynedd’s industrial heritage landscapes, taking on the properties of the stone of which it is partially comprised: difficult and inherently hybrid, fluctuating between valued and unvalued, sometimes waste, sometimes asset. The “bastard” analogy as it is used in this paper is relevant to two audiences, though many occupy spaces in both fields. For contemporary archaeologists, the transgression of boundaries by, and ongoing liveliness of, seemingly static material, despite attempts to fix it in place and time, is pertinent. For those engaged in critical heritage studies, the ways in which heritage boundaries can
compromise rather than support an industrial heritage site’s OUV – in this case via the exclusion of traditional industrial practices (including waste production and re-use) – is a timely discussion relevant beyond The Slate Landscape of Northwest Wales.

**The Power Politics of Mapping**

In many ways, boundaries can be seen as a powerful means of creating cohesion and easing complicated tensions in the landscape, such as those discussed above. The drawing of heritage boundaries is “a seminal act that defines the site”, a necessary step in the formalization and eventual management of sites or serial properties (Garden 2006, 399), and although these boundaries are not always accompanied by fences or other forms of physical demarcation, they can have considerable legal, social and economic impact. Bruno Latour argues that “the cartographer dominates the world” by creating and using what he calls “immutable and combinable mobiles”, objects like maps and notebooks which allow for the transportation and combination of information (Latour 1987, 227). For Latour, the inscription of lines on paper makes implicit geography explicit, transforming thoughts and beliefs into universal “precise, certain and justified knowledge” (Latour 1987, 216). Similarly, Michel Foucault writes that it was engineers and cartographers who “thought out space” (Foucault 1984, 244), sentiments echoed by Henri Lefebvre in his discussion of how maps attempt (and, according to him, ultimately fail) to “code and decode all [the] meanings and contents” of a space (Lefebvre 1991, 85). Maps therefore do not merely reflect knowledge in the world but create it: “Mapping is an active process of intervention in the world […] Mapping is a sense-creating process as much as a sense-making process” (Crampton 2013, 425). In other words, maps represent boundaries as something solid, material and therefore deeply consequential in the landscape, and how these consequences take shape is dependent on the landscape in question.

All these authors share the opinion that the production of space is intimately tied to the production of knowledge and power, and that the drawing of boundaries is an inherent part of the process. In noting that space can be marked either physically or symbolically, Lefebvre recognizes that boundaries do not have to have a material correlate to, in essence, make them real (Lefebvre 1991, 141). Boundaries, even in the absence of physical markers, can have profound real-world consequences, with the potential to be either inclusive or exclusive: a boundary “distinguishes so easily between an inside and an outside” and “can so easily be yet another way of constructing a counterposition between ‘us’ and ‘them’” (Massey 2005, 152). Bounding an area can be understood as an attempt to fossilize its identity, in essence separating time from space (Massey 1994, 8); this is especially relevant to the demarcation of heritage sites, where change over time is heavily managed and particular identities from particular times are created, disseminated and conserved. In Northwest Wales, heritage boundaries can be understood as an attempt to ease the tensions which arise from the ambiguities of waste matter, discussed below, or the challenges of dealing with two competing lineages, as seen in the later case study of Penrhyn Quarry. While the boundaries are not particularly successful at solving either problem, they do serve the intended function of managing the serial properties as per guidelines provided by UNESCO and its consulting body ICOMOS (International Council on Monuments and Sites), ensuring that, in essence,
they remain “calcified in a particular time and space despite the ceaseless evolution of the world” (Di Giovine 2009, 30).

**Permanent Transience: Waste's Disregard for Boundaries**

Waste, by its very nature, is bastardous: disorderly, disruptive, indeterminate, often unwanted, at times morally offensive, and most certainly difficult to categorize (Douglas 1966; Moore 2012). Challenging traditional definitions of heritage (Ross and Angel 2019, 1), waste is ambiguous matter which “destabilises potential futures and transgresses the prescribed boundaries it is placed in” (Venovcevs 2022, 58). Excess material left in the wake of industrial extraction is no less polysemous, its value fluctuating in response to a number of social, technological and economic factors (Venovcevs 2022, 44). Like other forms of waste, the slate waste of Northwest Wales also falls under the descriptor of “unruly”, refusing to be fixed in time and space.

The waste tips included within the boundaries of the UNESCO designation have settled into a natural angle of repose since their deposition, making them somewhat stable features of the landscape; that is not to say, of course, that they do not experience significant change as they are colonized by plant life and destabilized by traversing goats and hikers. Despite their overbearing size and apparent permanence, the contents of the tips do not stay put, nor did they stay in place during the operating years of the quarries. Carried off beyond the confines of the tips by workers, waste rock was reused and incorporated into quarry infrastructure: inclines, retaining walls, waterways and railroad beds were built from bad rock, as were the planned villages, some now in ruins, which housed quarrymen and their families. The **caban** – the messhouse, meeting place, Welsh cultural hub and safehouse for union dealings – was also often built by quarry workers from dry-stacked waste rock. The same can be said for the **gwaliau**, three-sided trimming sheds where slate was chopped down to size using long, dull blades. Large slate slabs were used as windbreaks outside doorways, fashioned into quenching tubs in smithies, used to line watercourses or placed upright as dividers between working areas in mill buildings (Figure 3).

In modern times, haunted by the legacy of the 1966 colliery tip collapse in Aberfan (which killed 116 children and 28 adults), residents of the town of Blaenau Ffestiniog have expressed anxiety about the stability of slate tips, vocalizing during informal interviews hopes that they “stay put” (“Angie”, pers. comm., 12 July, 2022). At the same time, local inhabitants further the dispersal of waste through ongoing small-scale reuse, defying the overarching narrative that the industry now rests firmly within the domain of the past. Farmers gather rock from the tips to build walls and fences from slate slabs (a vernacular form of fence-building known as **crawiau** – see Figure 4, below), trimming waste is used as gravel fill and locals repurpose bastard rock – quarried and dumped perhaps two hundred years ago – to make rustic slates for barns and outbuildings. During an interview with a village resident of Cwm Penmachno, I was told that locals often wander down to the tips with wheelbarrows to collect waste rock for their gardens (“Iain”, pers. comm., 20 February, 2023). During a site visit to a quarry near Blaenau Ffestiniog in early 2023, I came across a gentleman scouring the tips for slabs large enough to serve as window lintels; he remarked that he saw no need to pay for the material when
FIGURE 3. Examples of slate waste used in Dinorwig Quarry, SLNW Component Part 2. Clockwise from top left: a row of ruined trimming sheds (gwaliau) constructed from dry stacked slate; upright slabs used as dividers in the Australia level mill; office buildings with upright slate slabs used as a windbreak; a partially disassembled quenching tub made of slate slab, with decorative compass whorls.
it was free for the taking only a short distance from his home. Slate is still gathered and used for various artistic ventures, from sculptures to jewellery, continuing a tradition of the fine slate handicrafts proudly created by quarrymen. To this day, tiles are pilfered from ruined quarry buildings to be sold or reused elsewhere, allegedly fetching £2 to £4 apiece depending on size (“Errol”, pers. comm., 21 February, 2023).

Slate waste also embodies a lack of economic and temporal fixity, particularly as it relates to ongoing cycles of reuse. Modern secondary industries have had varying levels of success in crushing and pressing slate into bricks, using slate dust in cosmetics and hygiene products or mixing pulverized slate with composites to form a new variety of roof tile (Environment Times 2015; SLNW 2021a, 137–139). Some quarries still operate on a small-scale basis by “mining” the tips to produce landscaping and architectural products rather than producing roofing material. These modern ventures are a continuation of the industry’s boom-and-bust cycle: when producing tile was no longer economically viable, quarries diversified into producing writing tablets, aggregates and other products, and protracted periods of economic depression led to secondary industries of waste reuse.

Instances of theft from the tips were recorded throughout the nineteenth and twentieth centuries, with one instance in the Nantlle Valley in 1822 being described as a “scandalous threat” (Gwyn 2015, 74). During the early decades of the twentieth century, men working in small crews scavenged across the tips to find stone that, in the face of economic hardship, now became “good enough”. The hogiau domen, the “tip lads”, were adept at digging down through overburden to find sufficient off-cuts and slabs of bastard rock, leaving small craters, like acne scars, on the face of an already-altered landscape (Gwyn 2015, 74). Disused quarry buildings were also scavenged for raw material, much like today, with blocks split into small tiles or slabs carted off for use elsewhere (Gwyn 2015, 74). The placement of some of these sites of secondary industry within the landscape was not incidental, and was deeply connected to the socioeconomics of the time (Dawdy 2006; Mitchell 2017): they were often located on the backs of tipping piles or hidden by walls of waste rock, deliberate acts of concealment by men who sold slate out of sight of the authorities. While tip quarrying was not always done illegally or “under the table”, the practice was especially prevalent during the Great Depression (Gwyn 2015, 74). This work was temporary and cyclical, ebbing and flowing in synchrony with the global price and demand for roofing tile; modern secondary industries are regarded as both a continuation of this socioeconomic cycle and as being illustrative of a return to the industry’s humble beginnings of individual enterprise.

Many of the tips within and surrounding the SLNW are now out-of-bounds for secondary industries, either due to the UNESCO designation or to being listed as scheduled monuments, highlighting conflicting forms of value. The rock’s status as waste is therefore both socially and economically determined; landforms which were once deemed unsightly or regarded as scars upon the landscape in need of healing (Storm 2014) are now lauded for their aesthetic and historical significance, a poignant reminder that both value and meaning, even in the context of waste, are fluid and context-dependent (Pollock et al. 2020, 142).

It is unsurprising in this regard that only tips which have remained relatively stable since the closure of the quarries – in other words, those that have not experienced any
significant changes in form or economic value – were included within the boundaries of the UNESCO designation. Such features, alongside structures built from waste rock, are easier to categorize and pin to a predetermined time and place. But even this stability is illusory: despite the drawing of boundaries, the constant movement and reuse of not only finished product but also waste – which in and of itself had (and continues to have) ever-shifting values – demonstrates the impossibility of fixing the form, meaning and identity of an industrial waste landscape, even under the auspices of heritage. Although seemingly permanent and immovable, it possesses a temporal and spatial transience, defying heritage boundaries and acting simultaneously as industrial waste from the past and as a natural resource in the present.

Heritage Boundaries, Relationality and Buffer Zones

UNESCO, Boundaries and Mineral Extraction

The boundaries of a nominated World Heritage property, according to the UNESCO’s Operational Guidelines for the Implementation of the World Heritage Convention, are an essential component of its management and protection. While the placement of these boundaries is largely left to the discretion of state parties to the convention, the guidelines stipulate that they “should be drawn to incorporate all the attributes that convey the Outstanding Universal Value and to ensure the integrity and/or authenticity
of the property” (UNESCO 2021, Paragraph 99). Furthermore, they should include “all those areas and attributes which are a direct tangible expression of the Outstanding Universal Value of the property, as well as those areas which, in light of future research possibilities, offer potential to contribute to and enhance such understanding” (UNESCO 2021, Paragraph 100). Although the paragraphs quoted are broad and inclusive in their descriptions, the legislative and regulatory frameworks which are part and parcel of UNESCO inscription often result in conservative boundary mapping, to avoid undue conflict with other legal or customary boundaries.

While mineral extractive activities are not specifically prohibited in the World Heritage Convention (Affolder 2007), UNESCO’s advisory bodies state that such activities are “incompatible with the values for which World Heritage sites were established”, citing concerns that mining and quarrying could “jeopardize the values for which [sites] have been inscribed” (UNESCO 2000, 4). Under the advisement of ICOMOS, state parties are asked to commit to a prohibition of present and future mineral extraction within the boundaries of nominated properties, and as of 2003, the International Council on Mining and Metals approved a “no-go commitment” against prospection or mining within World Heritage properties (Hansell 2021, 323). This hard-line approach, imported wholesale from natural heritage management strategies, has created considerable contention in some mining-related World Heritage cultural landscapes, as government bodies have sought to revive industries tied to localized mineral deposits (Hansell 2021; Tost et al. 2021). Although cultural landscapes are commonly considered to be a mosaic of “relict and living features” (Hansell 2021, 322), such inflexible management approaches struggle with both the previously discussed cyclical temporality of mineral extraction and any ongoing local exploitation of mining waste or mineral deposits. With its inclusion within World Heritage boundaries, mining waste must remain waste in an economic sense; it is stripped of its potential to become an industrial resource, and is valued instead for its potential to attract paying tourists within a new heritage economy (Meskell 2014, 237). This is yet another manifestation of what Hazel Tucker and Elizabeth Carnegie have described as the dissonance between notions of OUV and modern-day local values (Tucker and Carnegie 2014, 75). Rather than being inclusionary, World Heritage Site boundaries become exclusionary, “harbinger[s] of dispossession” (Meskell 2019, 996), exhibiting an indifference to the social wellbeing, sustainable growth and the often plural (and sometimes contradictory) values of a nominated heritage property’s greater environment (Tucker and Carnegie 2014).

Relationality and Buffer Zones

There is a growing understanding that landscapes are inherently subject to constant change, given the dynamic nature of all their interacting components (Dannebeck et al. 2009). Relational approaches recognize that landscapes are never divorced from nature (Whatmore 2002), the influences of globalization (Amin 2004), the politics of capitalist production (Mitchell 1996), social relations (Massey 1994) or embodied experience (Tilley 1994). They also stress the importance of human and non-human co-constitution within landscapes and, crucially, the ways in which landscapes can be understood as process – always changing, always in negotiation, in many ways unbounded, constantly
being produced and reproduced in concert with the tangled web of actors who dwell among them (Ingold 1993; Mitchell 1994, 1998; Amin 2004). Relational descriptions of landscapes which highlight “flow, juxtaposition, porosity and [...] connectivity”, and which characterize them as unstable and unbounded “temporary placements of ever moving material and imminent geographies, as ‘hauntings’ of things that have moved on but left their mark” (Amin 2004, 34), are more in line with understandings of living landscapes like Gwynedd. The standardization and museumization which often follow the establishment of heritage sites, typically as a result of their being tailored to groups of tourists, can instead have a deadening effect on landscapes (Burlingame 2020, 4), cutting relational ties and effectively smoothing out the “gaps and gasps, stutters and cuts, misfires and stoppages, [and] unintended outcomes” which contribute to their liveliness (Thrift and Dewsbury 2000, 418).

Simply put, relational landscape approaches are better able to accommodate the bastardous nature of industrial heritage landscapes, with their contesting lineages, far-flung networks of connections and ever-shifting identities and values. Applying relational understandings of landscape to global heritage policy, however, is contentious. UNESCO itself has called for a more relational approach to heritage, and an awareness of the ways in which heritage properties are connected to their wider environments has grown in the last two decades. The 1972 World Heritage Convention itself is heavily focused on nominated properties, with only Article 5 referencing an adjacent “community” (UNESCO 1972). The recommendation of a “landscape approach” appeared in an advisory report on climate change in 2006, adding that heritage sites should be thought of in an “integrative manner” and “envisaged in a broader environment and in relation to system planning” (Cassar et al. 2006, 24). Relational approaches are most often invoked in discussions of sustainable development (e.g. UNESCO 2021, Paragraphs 112, 119 and 132), or in reference to buffer zones. An example pertaining to both can be found in the “Policy for the Integration of a Sustainable Development Perspective into the Processes of the World Heritage Convention”, which states that state parties should give “consideration in particular to the integrity of socio-ecological systems”. In this context, the policy adds, “the potential of buffer zones (and other similar tools) should be fully harnessed” (UNESCO 2015, Article 11.10).

The most recent version of the Operational Guidelines describes a buffer zone as an optional component comprised of “an area surrounding the nominated property which has complementary legal and/or customary restrictions placed on its use and development in order to give an added layer of protection to the property” (UNESCO 2021, Paragraph 104). The discussion surrounding their purpose and use belies an understanding of landscape relationality, as participants at the International Expert Meeting on World Heritage and Buffer Zones in 2008 recognized that “actions may take place well beyond the boundaries of a property and any buffer zone that might nonetheless have a significant influence upon the outstanding universal value and integrity of a property” (UNESCO 2008, 190). Rather than being used to connect heritage properties with their surroundings, buffer zones are instead intended as tools of exclusion, used “to regulate undesired influences” (UNESCO 2008, 12). The intended function of this two-zone system, more applicable to natural heritage sites than cultural landscapes,
is that of a secondary boundary of control intended to mitigate potential threats from outside the nominated area.

Rather than defining their own buffer zone, Northwest Wales adopted the boundaries of Landscapes of Outstanding Historic Significance (LOHS), depicted as lightly shaded areas on the map in Figure 5 below, a non-statutory title given to large areas of Gwynedd County in the 1990s. Owing to the designation’s non-statutory nature, the boundaries of LOHS can be much more inclusive and adopt a more holistic approach, serving only to highlight significance and provide advice to landowners and heritage workers on best management practices. As UNESCO requires “legal and/or customary restrictions” within buffer zones (UNESCO 2021, Paragraph 104), and because active mineral extraction takes place within the LOHS, The Slate Landscape of Northwest Wales was assessed by ICOMOS as ultimately lacking a formal buffer zone (ICOMOS 2021, 439). There is a palpable irony in the fact that ICOMOS has expressed concern than an overly strict application of buffer zones – not heritage boundaries – has the potential to result in the “isolation of a heritage property from its long existing social, cultural and economic context, and may contribute to unplanned and unnecessary museification of the heritage property by conceptually isolating the property from its surroundings” (in UNESCO 2008, 24). Despite calls for buffer zones to be mobilized in more relational ways, as a means of integrating nominated properties into living landscapes, they continue to be used as a secondary layer of protection against threats, furthering isolation. While some expert panellists have called for the abolition of the two-zone system or for non-statutory management strategies, alternatives have been labelled “unconventional” and “radical” (UNESCO 2008, 32). The consequences of such hard-line approaches to boundaries and buffer zones, which ultimately result in the championing of one of the bastard’s lineages over another, are discussed in a case study below.

**Case Study: The Problem with Penrhyn**

Penrhyn Quarry, as it is known today, was established in 1782 by Richard Pennant, the first Baron Penrhyn, using family wealth from Jamaican sugar plantations to buy out independent leases on his father’s land (Lindsay 1974, 43). As the workings expanded in size and the number of quarrymen steadily grew, the quarry became organized into individually named benches known as “galleries”, each manned by multiple crews of three or four men, often intergenerational family groups (Jones 1981, 73). Passed down through the Pennant family, Penrhyn Quarry hit its peak in 1898: it was then the largest slate quarry in the world, boasting a record profit of £133,000 (Lindsay 1974, 255). The fall came soon after, and on 22 November, 1900, 2800 men walked out of the quarry in what became known as “The Great Strike”.

As the strike ended in the latter months of 1903, only a fraction of the men who had left three years prior returned to work (Gwyn 2015, 11). By then, however, the damage had been done, and the rising popularity of alternative roofing materials coupled with the low cost of foreign slate sent the Welsh industry into decline (Lindsay 1974, 256–257). The building frenzy that had started with the Industrial Revolution came to a halt with the onset of World War I, and with the loss of the German market and a primarily male workforce, the slate industry was declared to be “non-essential” by 1917 (Lindsay 1974,
FIGURE 5. Map of the nominated property boundaries, Snowdonia National Park and Landscapes of Outstanding Historical Significance. SLNW Component parts listed: (1) Penrhyn Slate Quarry and Bethesda, and the Ogwen Valley to Port Penrhyn; (2) Dinorwig Slate Quarry Mountain Landscape; (3) Nantlle Valley Slate Quarry Landscape; (4) Gorseddau and Prince of Wales Slate Quarries, Railways and Mill; (5) Ffestiniog: its Slate Mines and Quarries, 'City of Slates' and Railway to Porthmadog; and (6) Bryneglwys Slate Quarry, Abergynolwyn Village and the Talyllyn Railway (source: SLNW 2020).
259–260). Despite a brief upswing during the interwar period, the quarries began to close one by one. Penrhyn managed to continue operations at a drastically reduced capacity, eventually being sold by Lady Douglas Pennant to Alfred McAlpine Plc in 1965. Welsh Slate Ltd purchased Penrhyn in 2007, and the company continues to quarry and produce roofing slates with a workforce of approximately 100 employees under the umbrella corporation Breedon Group Plc.

The scale and historical significance of the Penrhyn estate made it an obvious candidate for nomination as part of The Slate Landscape of Northwest Wales. Component Part 1 of the cultural landscape consequently includes the quarry itself, the Felin Fawr mill complex, stretches of the quarry railroad, Port Penrhyn in Bangor, Mynydd Llandy-gai Quarry village, Bethesda town and the ostentatious Penrhyn Castle and grounds in Bangor (SLNW 2021a, 20). Comparing a satellite image of the quarry with the heritage boundary map, however, reveals that only a small section of the present-day workings has been included within the inscribed area (the shaded area shown in Figure 6). The extensive southern pit, northern mill complex and the tipping piles along the western and northern edges were all omitted, resulting in jagged lines which excise the lower quarry from the upper. Although the entirety of Penrhyn was originally proposed by Gwynedd County Council and the Nomination Committee for inclusion, with the tentative agreement of Welsh Slate Ltd (Dafydd Gwyn and Roland Wyn Evans, pers. comm, 14 July, 2022), ICOMOS was less than receptive to the idea of having active industry within the boundaries of a World Heritage Site. The successful nomination therefore omitted all properties which had active industrial components or active mineral permits, including secondary industrial activity.

Although greatly modernized, Penrhyn still quarries using the gallery system implemented in 1799, and galleries still retain their old names. New galleries are also christened with witty monikers, and some of the workers who have been employed in the modern quarry are fifth- or sixth-generation quarrymen (and, in modern times, quarrywomen). Several varieties of roofing slates are still split by hand using the same tools and techniques which have been passed from father to son for centuries, techniques which have remained unchanged since at least the medieval period (Spiwak 2020; Figure 7, below). The state party themselves recognize the importance of active industry in their management plan, stating that it ensures the continuation of a culturally significant traditional skill while doubling as “a vitally important sector within global heritage conservation” (SLNW 2021a, 75). Subject to strictly enforced planning controls by Gwynedd Council, the ongoing extraction of slate around the town of Bethesda is considered vital to sustainable growth initiatives and is also highlighted as “support[ing] proposed World Heritage values in several different ways” (SLNW 2021a, 137).

The true problem with Penrhyn lies in whether modern quarrying constitutes a threat to the OUV of Component Part 1 and therefore cannot be included within the boundaries of the nominated property. As pointed out by Friederike Hansell, mineral extraction can contribute to the heritage value of historical mining sites through the continuation of traditional land use, as long as the OUV is not threatened (Hansell 2021, 330–331). The Slate Landscape of Northwest Wales designation was inscribed on the basis of Criteria 2 and 4 (UNESCO 2021, Paragraph 77): the serial property exhibits both a heav-
FIGURE 6. A satellite image of Pethryn Quarry (left: Google Earth image reproduced under fair use), compared to the boundaries of SLNW Component Part 1 (right: cropped image) (source: SLNW 2020).
Bastard Rock, Bastard Landscapes

Bastard Rock, Bastard Landscapes

ily transformed quarrying landscape and the important exchange of developments in architecture and technology, through which “skilled workers and knowledge transfer […] was fundamental to the development of the slate industry” (SLNW 2021b). The Statement of Authenticity furthermore includes “living communities” and “a vibrant cultural tradition, including slate-working skills” (SNLW 2020, 23). While this vibrant cultural tradition qualifies for intangible heritage status, the notion was not considered by the state party (Dafydd Gwyn, pers. comm., 14 July, 2022); calls for the dissolution of the tangible/intangible binary (e.g. Brown 2023) ring especially true in Northwest Wales, where the craft and its ongoing survival depend on an intimate and inherently tactile relationship with localized deposits of slate.

ICOMOS’s prohibition of active mineral extraction within WHL properties has resulted in a somewhat macabre situation, where quarries must become inactive and mineral permits must expire for them to be considered in any boundary change proposal. The industrial lineage of the “bastard landscape” must die out in favour of heritage, and with it a craft that has endured for centuries. According to the collection of supplementary documents provided by the SLNW (2021c), a seventh property, the Aberllefenni Quarry, was also proposed for nomination but was ultimately excluded due to its active permits and intermittent use. Areas with permits for waste relocation or reuse in the areas of Nantlle Valley and Blaenau Ffestiniog were also omitted, despite the historical precedence for secondary industry. All of these sites, Penrhyn included, are “direct tangible expression[s] of the Outstanding Universal Value of the property” (UNESCO 2021, Paragraph 100). Active mineral extraction in this context “offer[s] potential to contribute to and enhance” the understanding of the properties’ authenticity and integrity, rather than constituting a threat to them (UNESCO 2021, Paragraph 100). As it stands, the quarries and tips

**FIGURE 7.** A still from a Breedon Group Plc press video showing a Penrhyn quarryman splitting slates using traditional tools and methods.
themselves are considered to possess heritage value – to be worthy of inheritance, in the parlance of our “bastard” analogy – but the living processes which have created and continue to re-create these waste landscapes are delegitimized through their exclusion from world heritage properties.

Conclusion

The drawing of heritage boundaries can be understood as an act of “sense-making” (Crampton 2013, 425), a means of easing tensions in the landscape and facilitating rigid management policies. It is also a “sense-creating” exercise which attempts to fix the identity of a place (Crampton 2013, 425), fossilizing the landscape through the separation of space from time (Massey 1994, 8). The management plans derived from such a strategy are consequently unable to accommodate the cyclical temporality of mineral extraction and secondary industries, nor the ongoing liveliness of industrial landscapes and their adjacent communities. The bastardous nature of these landscapes, and the waste from which they are largely comprised, are part and parcel of their authenticity. Rather than constituting a threat to the authenticity and integrity of Component Part 1, modern slate quarrying has the potential to contribute to the OUV of the site rather than diminish it. Accordingly, the inclusion of slate-based industrial activities within nominated sites has the potential to honour and safeguard the interchange of technological knowledge named in Criterion 2 of UNESCO’s Operational Guidelines rather than disrupt it, as well as to promote sustainable growth and to support a vital source of architectural conservation materials.

The Slate Landscape of Northwest Wales is an example of how the blanket application of global heritage management policies can unintentionally diminish the local identity it seeks to conserve for the benefit of future generations – one size does not fit all. Returning to the “bastard” analogy, ICOMOS’s prohibition of active mineral extraction forces a choice between two lineages: is it a heritage landscape, or is it an industrial landscape? Within current world heritage frameworks, it cannot be both. It also invokes the question of who has the right to the inheritance of global heritage: the global “consumers”, who may only visit Gwynedd once in their lifetime, if at all, or the local “producers”, who live in and alongside it every day (Graham et al. 2000, 238-239), and who are trying to keep their traditions alive?

While this “heritage paradox” is impossible to resolve, relational approaches to heritage landscapes, which conceive of landscapes as unbounded and deeply interconnected constellations of people, places and things, are able to accommodate the ambiguity and unruliness of Gwynedd’s bastard landscapes of waste – whether said waste is designated as a scheduled monument, is being reused through secondary industrial processes or is being newly created through modern quarrying practices. If the boundaries which are drawn in support of heritage management practices are not serving local communities well, aligning with UNESCO’s sustainable development goals, or reflecting the reality of the landscape, however messy, then it is perhaps time to radically rethink the function of boundaries, how they are drawn, or heritage management strategies as a whole.
Acknowledgements

A heartfelt “diolch” to my various friends and informants in Wales for their hospitality and generous gifts of knowledge and time. Thanks also to the reviewers, the Relics of Nature team, my supervisor and co-supervisors and the IAKH PhD seminar group at the University of Oslo for their valuable feedback. Finally, thanks to the editors of this special forum for giving me the opportunity to contribute.

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Alexa D. Spiwak is a PhD candidate in the Department of Archaeology, Conservation and History at the University of Oslo. She is associated with the Relics of Nature: An Archaeology of Natural Heritage in the High North and HEI: Heritage Experience Initiative projects. She holds an MA in Archaeology from Memorial University of Newfoundland and a PGDip in Cultural Heritage Conservation and Management from Fleming College. Her current research focuses on the heritage of slate quarrying in Northwest Wales, exploring themes related to global heritage policy, contemporary archaeology, deindustrialization and more-than-human approaches to landscapes of heritage. Address for correspondence: Department of Archaeology, Conservation and History, Blindernveien 11, 0371 Oslo, Norway.