From Toxic Industries to Green Extractivism: Rural Environmental Struggles, Multinational Corporations and Ireland's Postcolonial Ecological Regime
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In this article, we analyse the political ecology of Ireland's industrial landscape in the current era of digital capitalism, which has been posited as the primary engine of an oncoming "green" eco-modernisation via smart technologies. As our research has found over the past several years (see Bresnihan and Brodie 2021a, 2021b, 2023), far from representing benevolent contributors to the planetary transition away from fossil fuels, digital corporations are poised to become primary beneficiaries by funnelling accumulation through green transition strategies into and through their proprietary infrastructures. In what follows, we unravel the ways in which this does not represent a necessarily new development in Ireland, but rather a historical and continuous transition within Irish environmental governance that facilitates the accumulation strategies of multinational companies via a model of foreign direct investment (FDI)-led state development. In so doing, the Irish state not only participates in these activities as they implicate Irish territory within these global extractive regimes, it also enrols Irish land, labour and infrastructure into them in geographically uneven ways. But, at the same time, there have been a multitude of historical and contemporary examples of civil society objection and outright popular resistance to this development model, representing points of friction at which environmental contradictions are negotiated and contested across local communities and the state in often ambivalent ways.

In this paper we hope to make three contributions to the lively and important conversations opening up across the island of Ireland around environmental and climate justice, rural politics and development, and the unfinished project of decolonisation[1]. The first places the question of data centres, and the broader vision of Ireland as a green tech hub, within a sixty year history of economic policy that has been orientated towards the attraction of FDI. We draw on analysis which places Ireland within the historical emergence of the capitalist world system, a system which requires the uneven spatial development of core, semi-periphery and periphery. While efforts were made to plot an alternative developmental path after formal independence for the south in 1922, as in other formal colonies, these strategies were ultimately unable to resist the restructuring of the global economy, in particular the development of the Atlantic economy after World War II (see O'Hearn 2001). The new relationships of dependency this ushered in occurred through simultaneous procedures: the increasing liberalisation of the capitalist world system and the ongoing intervention in so-called "developing" economies by imperial powers and their supranational organs. Our contribution to "Irish capitalist studies" as conceived by this special issue is to attend not only to the political economies but the global (and planetary) political ecologies that arose from these transformations, and map out Ireland's place within them. We thus argue that Ireland's position as a semi-periphery, and the forms this took since the 1950s, do not just carry social and economic implications but ecological ones - in how landscapes,

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[1] We would like to acknowledge the important and ongoing contributions of a number of scholars and activists to these conversations, conversations which have been instrumental in the development of this paper, all of whom are staples at the front lines of environmental justice research in Ireland. To name a few: V'Cenza Cirefice, Sian Cowman, Laure Detymowski, Louise Fitzgerald, Robert Keogh, Sinéad Mercier, Rory Rowan, Lynda Sullivan and Fiadh Tubridy.

resources and infrastructures, particularly in rural regions, have been viewed, (de)valued and differentially produced by the state through FDI. Expanding on scholar Sharae Deckard's analysis of Ireland's "neoliberal ecological regime" (2016), we describe this as Ireland's *postcolonial ecological regime*.

The second contribution we make scales Ireland's postcolonial ecological regime to a national level. Understanding Ireland as a semi-periphery within a capitalist world system does not easily account for the specific forms of uneven development that take shape within the national boundaries: Ireland's postcolonial ecological regime produces its own cores and peripheries, its own spatial inequalities, including across a rural/urban divide inherited from colonial era cultural, social, and environmental divisions and imbalances. This is where the more material, specifically ecological, lens for understanding Ireland's FDI-led development since the 1950s is so important, especially in how these complex financial systems came to "organise nature" within shifting strategies of accumulation (see Deckard 2016). We offer a synthetic overview of precisely how, since the late-1950s, the Irish state has facilitated various multinational companies working in different industrial sectors to extract resources, pollute, and access public land and infrastructures with direct implications for the health, culture and livelihoods of rural communities. We understand all of these activities through the lens of *extraction*. Documenting these different industrial activities is important not just because it offers a way to analyse Ireland's postcolonial ecological regime, responding to changes in the capitalist world system, but because it demonstrates the urban/rural character of these processes and the production of rural peripheries as "sacrifice zones" for Ireland's (eco-)modernisation (Horrigan 2021, Lerner 2012). This analysis can be fertile and raise broader questions around the place of the rural within liberatory politics, historically and today, especially in light of Ireland's current progress of eco-modernisation and the ongoing ideological construction of "rural politics" as anti-progressive by various actors along the political spectrum, from reactionary rural TDs to mainstream climate policymakers.

Finally, the concept of the postcolonial ecological regime allows us to avoid an overly-simplistic account that depicts a monolithic state facilitating powerful corporations to destroy the environment at the expense of local communities. Within the state, and in the ways that policymakers respond to input from civil society, scientific communities, and supranational regulation, there is conflict and contestation, with different ideological commitments and visions of development. This is especially true in the differential geographies by which environmental governance actually happens and landscapes are managed. In following the history of rural environmental politics and struggles in Ireland, we see a far more dynamic and differentiated state that has been able not only to facilitate the interests of multinationals, but also contain protest and dissent, advance novel forms of governance and regulation, and produce various discourses of "sustainable development" that reflect and support large-scale political and economic interests designed around FDI. Common refrains about Ireland's neoliberal governing powers and structures since the 1990s do not fully capture the stakes and endurances of the industrial and infrastructural histories that preceded and laid the groundwork for contemporary Irish politics in the postcolonial era. We discuss the dominance of professional scientific expertise and technical discourses around environmental issues in Ireland - something that is seen elsewhere, but which we argue has a particular valence in Ireland, aligning with the urban/rural divide and largely

serving, rather than challenging, the FDI-led model of state development. Ireland's postcolonial ecological regime is not just about permitting resource extraction or industrial pollution, but about producing environments-as-resources and landscapes-for-extraction, and legitimising these uses against those who object, including within current green initiatives. Indeed, as greenwashed industrial capitalism advances along familiar principles of development, Ireland offers an important site to examine its prehistories, with a particular focus on the role of the state and its semi-state organs endeavouring to achieve "net zero" and "sustainable" global operations.

This article is ambitious in its scope as we aim to provide a synthetic overview and critical analysis of Ireland's relationship to multinational corporations through an ecological and postcolonial lens. The main body of the article is structured around three sections, each of which make their own specific contribution to contemporary debates around environmental justice and politics on the island of Ireland. The first section brings together complementary but rarely combined areas of scholarship on Ireland: Marxist political economy, environmental sociology, and postcolonial literary studies. The aim of this section is to highlight the strengths and limitations of these literatures in addressing the relationships between Ireland's postcolonial development, rural politics and environmental governance. The second section offers a more descriptive, but by no means comprehensive, overview of some of the key forms, phases, and political responses which multinational corporate activities in Ireland have taken since the late-1950s. This history is not a simple, linear one, and we hope to convey both the elements of continuity as well as the novelty and rupture brought about by political resistance, shifts in the global economic system, and state innovation. We discuss what is distinct, and what is at stake, in present configurations of FDI and the Irish state, particularly as they relate to the new frontiers of green energy, climate solutions and digital technologies. Our third section focuses on why all of this matters. We thus turn to strategies of resistance and disruption, identifying the vital need for coalition-building beyond the sites and immediate concerns of local campaigns and how the idea of decolonisation may figure within that.

Ireland's Postcolonial Ecological Regime
The first body of scholarship we draw on to help us unpack what we call "Ireland's postcolonial ecological regime" focuses on Ireland's political and economic development across colonial and postcolonial periods. Drawing on diverse traditions of Marxian political economy, including world-systems theory and, more recently, the world-ecology approach (Moore 2015), this work situates Ireland's national trajectory within shifting regional and global structures of power and capital. Since the 16th century, Ireland has acted as a test-bed for British colonial strategy in the management of landscape, a laboratory through which developmental dynamics of "improvement," pioneered by colonial administrators like William Petty in the 17th century, enrolled people and ecologies into regimes of imperial accumulation, with deleterious effects in Ireland and then especially upon its later application in other colonies (see Bhandar 2020; Rolston 1993)[2].

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[2] The work of Slater, Macdonagh and Flaherty on the Irish Famine, for example, draws on Marx's concept of the metabolic rift to analyse the socio-ecological dynamics of the colonial agricultural economy in Ireland (Slater & Flaherty 2022; Slater & McDonough 2008). From the perspective of an "ecological regime," these scholars show how Ireland's colonial agricultural economy was not only about the

What is important for us is how Irish colonial history continues to shape and define aspects of Irish political and economic life today (see McVeigh and Rolston 2021), especially with regards to land use and environmental relations. There is no doubt that the "return" of Irish postcolonial studies in the wake of recent movements, such as Black Lives Matter (BLM) and the general reckoning of scholars and activists with the legacies of colonialism within and beyond Ireland (see Hogan et al. 2016; McAtackney 2022) requires critical parsing (Cleary 2022). In general though, we welcome the intellectual and political space it has opened up, particularly as it relates to the unsettling of Ireland's position within the capitalist world system and the enduring possibilities for anti-imperialist solidarity across national borders. And while the starting point for any such analysis must be the ongoing partition separating the north of Ireland from the Republic, scholars like Conor McCabe (2011) have shown that formal independence in the South did not magically bring about an end to political and economic dependence on Britain either - from the linking of the two currencies to reliance on British markets for cattle exports, key structural features of the Irish economy were kept in place by successive Irish Governments, and the establishment of the Free State as a "dominion" demonstrates a model of sustained imperial relationships, inside and beyond the borders of the country (Fuilálainn 2022; McVeigh and Rolston 2021).

Ireland's subordinate position within imperial and capitalist formations is not limited to British political and economic relations. As Deckard emphasises, "Ireland's uneven development and peripheralisation cannot be understood solely in the context of British colonialism, with no ability to account for its subsequent subordination to the hegemony of US capital and to core Eurozone states" (2016, 146). This corrective, likely directed towards those who over- rather than under-emphasise the influence of colonialism on contemporary Irish geographies and politics, also gets to a core issue of the ongoing uneven development of Ireland: the co-existence of "over-" and "under-" development through the asymmetrical distribution of risks and benefits derived from globalisation across the island. Analysing Ireland through historical geographical structures remains essential for understanding the circumstances and strategies by which contemporary Ireland moves ahead in its eco-modernisation process, both in terms of its material footprint and impacts as well as the structures of consent and dissent that drive and/or disrupt it.

Denis O'Hearn's work (2000, 2001) has been particularly helpful in tracing the emergence of Ireland as a "semi-periphery" within the capitalist world system post WWII. As O'Hearn details, "[t]he dominance of foreign industry, especially US-owned electronics companies, intensified after Ireland entered the EU (then EEC) in 1973. *The country became an export platform for US companies seeking access to the European market*" (2000, 72; emphasis added). O'Hearn thus shows how Ireland's growth in the late-1980s was in itself largely dependent on multinational investments by the "computer industry," whose companies decided to locate not only because of Irish industrial development strategies, but also because of the accumulating benefits of locating

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extraction of resources (in this case soil nutrients, plants) and the exploitation of labour, but about the undermining of local ecological conditions, transformation in social structures, reliance on unpaid ecological care work, and ultimately the catastrophe of the Great Hunger, which in turn saw the effective clearance of large areas of rural Ireland and the arrival of a new colonial ecological regime based on pasture-based, animal agriculture (Slater & McDonough 2022).

close to one another via "industry proximity" (see Vonderau 2014). By financially incentivising the computer industries, and attracting Intel to locate a microchip plant outside of Dublin (in Leixlip) in 1991, "the IDA bought economic tigerhood" (O'Hearn 2000, 74). By 1998, "Ireland was the world's second largest exporter of software behind the United States" (2000, 74), with software accounting for 12% of the country's exports (Ó Riain 2000). What is important to recognise here is the structural role of technology industries, and specifically the centrality of foreign direct investment by US companies, in the development strategies of the Irish state in the 1980s and 1990s. Their importance in the story of contemporary Irish development, as O'Hearn notes, growing out of a troubled history of postcolonial developmentalism in the South, is reproduced within their current leveraging power on not only current Irish tax and fiscal policy (see McCabe 2022), but increasingly energy policy, as we have argued elsewhere (Bresnihan and Brodie 2021b).[3]

There is no doubt that the growth in services in the 1990s, especially services from/for these types of companies and their evolved versions today (the tech platform giants and hyperscale data centre developers), has massively developed the Irish economy in certain indicators and massively accelerated the standard of living here. It is the nature of Ireland's economic "miracle" that requires greater scrutiny. From the end of the 1970s, IDA policy shifted away from more labour-intensive manufacturing (providing regional employment and economic development), as these sectors were lost to parts of the Third World. By the end of the 1980s, the IDA was buying jobs from tech companies, with an estimated 100,000 punts paid per job "created" by the Intel facility (O'Hearn 2000, 74). The primary draw to outsourcing in Ireland was low tax and not low wages (necessarily),[4] meaning "employment growth has taken a very different shape from economic growth" (79). These are the conditions which shape how Ireland participates in an unequal system of global exchange: the model of state development facilitates the financial operations of multinational industries, absorbing some of their global profits reaped in exploitative and extractive manners in Ireland and elsewhere. This dynamic is key to understanding how the Irish state's model of development facilitates the maintenance of uneven accumulation. Key amongst these state agencies was, and still is, the IDA. As Taylor argues, the IDA acted as the agent of multinational companies, smoothing over difficulties with other government agencies and helping to deflect concerns around environmental risks and hazards (1998, 60). While Taylor refers directly to pharmaceutical companies, the regime of multinational investment enabled by the state applies to the environmental treatment of multinationals in general, including, as we argue, technology manufacturers and later data centres.

One thing that has been perhaps underestimated is the extent to which the state *created* the environmental and infrastructural conditions for these companies to operate and profit in Ireland.

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[3] And this is just computers – as O'Hearn demonstrates, a mere ten US companies made up one third of the value of manufacturing in Ireland in 1994. In 1998, the ten percent growth of the economy could be largely attributed to the production and sales of the drug Viagra produced in Cork (2000, 75). This extraordinary tethering of the economy to the fortunes of multinational companies is one major reason for the economic turbulence in Ireland experienced since the 2000s.

[4] As well as a highly-educated, English-speaking workforce, a product of education investment by successive Irish Governments from the 1960s-onwards, which also produced a need for more "high-paying" jobs.

With this in mind, we argue that land, ecology, and the infrastructures that mediate these, are crucial to understanding the spatial politics of Ireland's FDI-led developmental model, especially in the technology industries. This is surfacing most clearly today in negotiations about energy and digital infrastructures, specifically projects designated as essential for datafication and "green" transitions. More recent green political economy offers a corrective to the missing ecological dimensions in the analysis of Ireland's developmental model (Fearon & Barry 2022). Placing this within a planetary context, Deckard writes that

> Ireland has played a significant role in the emergence of different cycles of systemic accumulation as a laboratory for new forms of expropriation, from sixteenth-century plantation to twenty-first century neoliberal austerity. However, this role must be understood *not only in terms of Ireland's socio-economic relation to the world-economy, but of Ireland's function in the world-ecology* (2016; emphasis added).

In this analysis, what happens in Ireland does not only have implications for Ireland, but for world systems more generally, as Irish state policies enable particular forms of extractive and polluting enterprises with planetary implications - from the disproportionate energy use of data centres to the required expansion of extractive activities to facilitate it. Deckard's framework pushes us closer to an understanding of how capital courses through ecological relationships in Ireland as understood through the state's adoption of neoliberal development models since the 1980s-1990s, including how the state mediates environmental relationships and how multinationals extract value today through green development.

In this regard, the second important body of work in conceptualising Ireland's postcolonial ecological regime is the rich seam of empirically-grounded environmental sociology that flourished in Ireland the 1980s and 1990s in response to the emergence of new "environmental social movements" (see Leonard 2007). The profile and nature of these movements were interesting - not neatly captured by the familiar dichotomy of Global North environmentalism, oriented around eco-efficiency and nature preservation, and environmentalism of the Global South, oriented around livelihoods, health, community and culture (Guha & Martinez-Alier 2013). In Ireland, some of the most prominent and powerful environmental social movements have been predominantly rural, mobilising discourses of territorial protection and community identity against the incursion of state-supported industrial development projects.

While not explicitly articulating their work through political ecology and "environmentalism of the poor" frameworks surfacing from the Global South, critical scholars in Ireland have situated these movements and environmental conflicts within broader political debates over modernisation and development (see Barry and Doran 2016; Garavan 2007; Leonard 2008). In 1993, Tovey made a distinction between "two versions of development and modernity" within what she described as "official" environmentalism and "populist" environmentalism emerging at the time in response to the industrial transformation of Ireland's landscapes amidst rapid globalisation (1993). According to Tovey, official environmentalism was predominantly urban-based and consisted of NGOs and professional experts (including academics) whose principal concerns were heritage and conservation. Populist environmentalism, on the other hand, was drawn from predominantly rural

communities, whose livelihoods and health were being adversely affected by State regulations and new industrial developments. There is a significant diversity in the nature of these developments (see below for more detail), but the most significant ones involved multinational corporations - whether for resource extraction or manufacturing.

Official environmentalism was notably quiet on the social and environmental implications of these new industrial developments. According to Tovey, this was because official environmentalism was broadly aligned with the Irish state when it came to national development and modernisation. Instead of engaging in criticism of state development policy, the focus was displaced onto the "irrationalities" of traditional features of Irish politics and culture, including objections to industrial developments in the countryside (see also Allen 2004). In contrast to these pastoral fantasies of rural irrationality, populist environmentalism often carried a strong and pointed critique of the form of economy and society that Ireland was becoming. To these mostly rural-based movements, top-down state planning and unquestioned support for multinational companies were seen as actively undermining local development and community control over place and resources, in ways that have taken new forms with the popular support for multinational developments in some rural areas (see Brodie 2020). The division between rural communities and urban-based elites has been a feature of Irish society across colonial and postcolonial periods - indeed this kind of spatial class division characterises the core/periphery divisions in other former colonies as rural territories were typically sites of resource extraction and urban areas the sites of mercantile and political power (Leonard 2008).

The geography and character of environmental social movements, particularly in the period of the 1980s and 1990s, demonstrates the enduring significance of the "rural" within environmental politics in Ireland. We see this today with recurring debates about turf cutting and burning. State policy, informed by climate science and resting on long-held assumptions about Ireland's modernisation, presents rural claims to "traditional ways of life" as no longer compatible with the imperatives of public health and climate change. In response, "defence of the rural" discourses are activated by local politicians and commercial peat operators, fanning resentments that reside in the perceived divides of urban/rural. The importance of the analysis brought to bear by environmental sociology is to place these simplified dichotomies within a broader, historical context - not to dismiss them, or to accept them, but to contextualise and navigate them. For example, reducing turf-cutting and burning to a "cultural residue" marginalises these communities, disrespects histories of rural livelihoods, and ignores the socio-economic and infrastructural constraints in parts of rural Ireland, where dependence on solid fuel heating systems is a reality that persists in the absence of affordable retrofitting schemes provided by the state. Meanwhile, continued State support for energy-intensive data centres perpetuates the view that the interests of multinationals (and Ireland's FDI-dependent model of development) are favoured over certain sections of the population (data centre energy consumption now accounts for 14% of electricity nationally, with rural households accounting for 12%). Whether we like it or not, understand it or not, the "rural" remains an important "mobilising concept within Irish society" (Tovey 1992, 111) and this alone demands greater attention (Leonard 2008).

Environmental sociology work in the 1990s has also provided important insights into the state response to new public concerns and campaigns around the environment. Pressure from social movements and civil society, particularly regarding risks to health from chemical manufacturing, posed a threat to the smooth operations of Ireland's FDI-driven development policy. The state stepped in to mediate this relationship and in so doing created new conditions for how environments, and environmental contestation, came to be known, regulated and governed. A key institutional response in this regard was the setting up of the Environmental Protection Agency (EPA) in 1993. The EPA was a state response to growing public disquiet and environmental conflicts relating primarily to the activities of multinational chemical companies but also to the agricultural industry (Taylor 1998). The EPA effectively translated contentious political debates about the FDI-led model of development (and agricultural intensification) into the technical domain of a supposedly neutral state body tasked with setting and monitoring "allowable" quantities of pollution. We see something similar with the role that An Bord Pleanála plays within planning, or the Commission for Regulation of Utilities plays within the water and energy systems: state strategy has been to inoculate itself against any challenge to the basic model of FDI-led development by containing controversies and opposition within narrowly defined, highly technical and administrative systems (more below). Taylor captures this perfectly when he writes as early as 1998: "environmental policy debate in Ireland is concerned no longer with the extent of ecological degradation, the quality of the environment or encouraging environmental sensitivity, *but with organising consent around new definitions of justifiable pollution* (1998, 53, emphasis added)."[5] We see similar technical discourses emerging today in response to questions raised around data centres, deflecting opposition into proposed technical solutions such as district heating systems and renewable energy.

Relating to questions of representation and political aesthetics, a third, and less utilised in the critical social sciences, body of literature that we draw from to understand Ireland's postcolonial ecological regime is cultural studies work on Irish postcolonialism. If environmental sociology and critical geography in Ireland have perhaps been reluctant to engage in the endurances of colonialism in Ireland over the past few decades for any number of reasons, the study of literature and culture has covered the topic extensively. Likely familiar to readers of *Irish Studies Review*, this persistence may be due to the discipline's entanglements with Irish Studies and thus its sharing of key (and ongoing) debates and discourses with history, which has been dominated by revisionism since the 1990s, leading to many prominent literary critics to forcefully maintain the

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[5] It is important to note that a key political force in this period of the late 1980s-1990s was the Progressive Democrat (PD) Party. Only ever a minor party within Government coalitions, the party carried an outsized role in aggressively pushing economic liberalisation policies, including low-tax and the privatisation of state assets and utilities. Mary Harney (PD) was the Minister for State with special responsibility for environmental protection when the EPA was established. However, it would also be a mistake to reduce the political consensus around FDI-led development to one political party. In 1992, during a Dáil debate on environmental problems linked to chemical and pharma industries, Brendan Howlin, a Labour Party member and former Minister for the Environment, stated: 'I am no great fan of the IDA. God knows I have criticised them often enough. The Green flat earthism we have heard twice today in this house does no service to the cause of trying to create jobs in this country. The 300,000 people out there who are looking for jobs will thank us in no small way when we talk in jocose or simple terms of technology being bad in the most basic and luddite of terms which is patent and absurd nonsense (Dáil Debates, 418: 957, April 1992; quoted in Taylor 1998, 66).

postcolonial framework against this encroaching historical recasting (see Connolly 2004). David Lloyd (1993), for example, and other contemporaries in the early-1990s such as Declan Kiberd (1996), Shakir Mustafa (1996), Luke Gibbons (1996), and those associated with the Field Day Theatre Company (see Eagleton, Jameson, and Said, 1990) agitated variously against the hegemonic "top-down elite histories" (Cleary 2022) of revisionist historiography, which sought to negate and depoliticise the "colonial" framework in favour of empiricism and so-called historical objectivity. Addressing the subject of colonialism, conversely, became paired with cultural nationalism, in a way that many literary theorists did not shirk, but nonetheless became perceived as an unpopular and unhelpful framework for understanding globalised Ireland in the emerging (neo)liberal, boom-time Republic and a tenuously Peace-time north.[6]

But what is useful about this postcolonial work is the way in which it understands how the historical condition of postcoloniality, as both a phase of development and an overarching material influence over infrastructures, political culture, and ways of life in Ireland, has organised life and shaped the Irish landscape in profound and often submerged ways across history. While we do not seek to unproblematically re-adopt the postcolonial as a framework for analysis, whatever its merits, we argue that its avoidance in other disciplines has served depoliticising aims and disrupted the ability to fully comprehend the complexities of Irish capitalism and its relations to the environment. One of many things that this negation of the colonial achieved was to uncouple issues of capitalism and environmentalism. Both were effectively depoliticised outside of literary studies, which sought to understand how a kind of cultural and political unconscious had driven and influenced relations to nature - and how alternative relations had co-existed and endured underneath official projects of colonial and postcolonial modernity. For example, literary scholar Mark Quigley's 2003 article on Blasket Island writer Tomás Ó Criomhthain positions him as a kind of subaltern modernist speaking back to the metropolitan rule, systems, and moulds imposed upon Irish speaking rural areas and landscapes by the postcolonial state's nation-building[7]. Quigley understands this, then, in the sense that Ó Criomhthain most vividly rendered alternative ways of life existing underneath official histories of colonial domination and postcolonial development via his celebrated, but often nostalgically misunderstood, literary text. These "submerged" perspectives, as social theorist Macarena Gómez-Barris terms the experiences and cultural responses of those often subjugated underneath the gaze of extractive projects and epistemologies (2017), are most frequently and vividly rendered in cultural production and analysis.

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[6] For a notable exception, see Carroll and King, 2003. Additionally, in the field of film studies and literary theory, the postcolonial has remained crucial to analyses.

[7] It is not for us to provide a comprehensive account of how imaginaries of the 'rural' and 'rurality' have been produced and used by the Irish state, Catholic Church and Irish media throughout the twentieth century. In general though, representations of the 'rural' are made to serve clear political and economic functions - whether as the pure space of the authentic Irish, untainted by modernising influences, or as a traditional barrier to Irish modernisation and cosmopolitanism. While superficially distinct, both these ahistoric accounts excise the central role rural landscapes/resources/people have played in Ireland's modern (urban) development, as well as the more radical subjectivities that have surfaced at different moments, making different claims on the rural.

Perhaps it makes sense then that most examples of postcolonial and environmentalist analysis of Ireland come from textual and cultural analyses. Derek Gladwin, for example, has written extraordinary work on the literary representations and histories of boglands as a kind of "postcolonial gothic" (2016); Michael Rubenstein has unearthed the centrality of "utilities" in the work of James Joyce and other Irish modernist writers, showing the complex political ecologies of colonial and postcolonial infrastructural provision through their representations in literature (2010); and Nessa Cronin has performed literary, historical, and cultural geographies of Irish landscapes to draw out submerged environmental relationships, demonstrating that the ecological is central to, rather than an extension of, colonial and capitalist relations in Ireland (see Cronin 2012, 2014, 2020; see also de Loughry and McCormack 2019; Mercier 2022). These scholars foreground the work of Irish writers and their representations and implications for ecology, landscape studies and environmental issues across different historical periods, from the peat bogs to water politics to other issues of environmental justice. However, while structurally this work recognises the enduring legacies of colonialism and its inscriptions upon, and entanglements with, Irish ecologies, it does not usually have a stronger, global, and (historical) materialist analysis, unlike some of the earlier postcolonial theory that would connect Irish nationalism and republicanism to global struggles of liberation from empire (see Eagleton, Jameson, and Said 1990).

Part of these disconnects come, of course, from the ambivalence of Ireland within more internationalist postcolonial frameworks. It is an uneasy postcolony, a country that has enjoyed both phenomenal prosperity and an ongoing colonial partition and subjection under empire north and south, albeit in different forms. Looking at the ways the land has been and continues to be used, the framework makes sense. Our own work on the colonial endurances of Ireland's peatland management, for example, demonstrates the ways that colonial "improvement" (see Bhandar 2020; Ruuskanen 2018) persists in the ways that peatlands are seen as wastelands to be made profitable by immensely transformative capitalist enterprise, today in the form of large scale renewable energy transformations (Bresnihan and Brodie 2023). In this work, we attempted to draw upon the lively cultural research around the bogs while demonstrating that these are not merely cultural remnants of particular tensions between nationalism and colonialism, playing out today as regressive theorisation versus the embrace of urbanism and the metropolis. They are ongoing wages of struggle, wherein Ireland's uneasy categorisation as a postcolony contains within it the contradictions of the Free State, the developmental state, the post-developmental state, and the out-of-control neoliberal capitalism that sustains its current era. Seeing the Irish landscape and its environment through this longue durée is essential for understanding the political terrain of Irish spatial and economic development today.

To conclude, what we find useful in the literary debates around Irish postcolonialism and its relation to rural sociology and Irish historiography is the way in which this work opens up space for more capacious and globally transformative ideas, although somewhat contained within the relatively limited space of cultural production. By trying to draw a venn diagram between these various bodies of literature, we are trying to contribute to an understanding of Irish capitalism that accounts for the entanglements of development, globalisation, the state, and the environment as structured by Ireland's postcolonial political economies. Together, they help us to draw out

Ireland's postcolonial ecological regime. We also hope to gesture towards the ways that the mantle of anti-colonialism within the postcolonial era, not necessarily nationalist but necessarily tied up in some of its key movements and debates, not only needs to be carried forward by culture, but by engaged work in other humanities and social science disciplines.

Multinational Corporations in Ireland: Enterprise and Extraction across History

In this section, we intend to unpack more specifically the environmental stakes of Ireland's strategy of FDI-led development, which we argue are united by continuous, albeit transforming, logics of extraction. We want to draw out three important points. First, that the logics of extraction have multiple forms, which we identify across the direct material extraction of resources, the development of infrastructures to facilitate extractive processes, and the designation of environmental sinks and the distribution of responsibility (or harm) upon those in marginal rural areas. Second, we want to demonstrate that the operationality of these logics has evolved over time, and become more extensive and, crucial for our argument, embedded within "green" strategies of growth and development. Third, and finally, we want to emphasise the role of the state in bringing this about through mechanisms of facilitation and mediation at the levels of planning and policy. In all of these cases, from responses to toxic chemicals to data centre development, the state attempts to resolve environmental conflict - around extractive growth and land use that come into frictional contact with environmental and ecological relations - through "technical adjustments" (see Günel 2019) to fundamental contradictions. Various public agencies and private environmental consultancies operating within the growing field of 'sustainability' were, and remain, aligned with state development policy and produce the discourses that smooth through Government policy responses, becoming the forerunners and approvers to common-sensical development policies. This form of environmental developmentalism always looks for technical solutions to fundamental environmental contradictions, united against the "irrational" objectors to progress.

In negotiation with these forms of state mediation between capital and the environment, how do the forms of resource (and other) extraction become more sophisticated and networked over time? How do the mechanisms of manufacturing consent and "social license," and the tactics of quelling dissent, form particular differences and continuities? How do communities disrupt and challenge governance strategies that rely on dense and overlapping forms of technical, professionalised and commercial expertise? And finally, how does this all become more mediated through infrastructure? A data centre is not extractive because it is taking things out of the ground. It is extractive because it is using huge amounts of energy, water, and data that are mediated through other, largely public, infrastructures. This is on top of the extractive financial technologies enabled by a system of taxation that is designed to support public goods but ultimately ends up facilitating a regime of accumulation that funnels capital elsewhere (see Scasserra and Foronda 2022). Thus, data centres, like other multinational infrastructures, instantiate a form of extraction that is more mediated, more networked, and more difficult to politicise and find points of intervention. We thus have to understand Ireland's postcolonial ecological regime as extractive *through* both material resources and the enabling infrastructures. In this section, we will lay the conceptual groundwork for connecting these activities and their logics across historical regimes of value production, material extraction, and capital accumulation, analysing how the state has

adapted to mediate the relationship between FDI and the contradictions that arise when it "hits the ground" (Mezzadra and Neilson 2019), especially in the form of environmental conflicts.

Resource Extraction
Ireland's first mining "boom" came about in the 1970s due to coalescing factors including tax measures for economic development and global changes in mining strategies and technologies, as well as the interest of Canadian multinationals in Irish operations (see Kearns 1976). As Kearns notes, Ireland has never been a country considered for its natural resources, and has not typically been included in conversations about extractivism. Extractivism, as Natacha Bruna defines the term, arises in the 1950s as an extension of colonial dynamics within the resource requirements of the capitalist world system, "focus[ing] mainly on economic efficiency goals rather than environmental goals, as is the case for mining and energy extractivism and the more recently academically explored agrarian extractivism" (2022, 839). Discourses surrounding the growth and importance of mining, usually driven by the industry itself but also frequently by pro-development academics in the earth and social sciences (e.g. Kearns 1976), argue for its economic benefits, employment opportunities, and fostering of "independence," the latter characteristic making it especially attractive to elites and planners in postcolonial states.

Mining was not "new" in Ireland, although it took on unfamiliar characteristics. On the one hand, apart from isolated coal deposits, energy industrialisation in the country largely relied on the strip-mining of peat in the midlands and enacted a simultaneously scientific and cultural modernity, tied together by a triumphalist national independence that was only punctured by the mainstream recognition of peat extraction's environmental tolls in the 1980s-1990s. On the other hand, the Shell-to-Sea project in Mayo received negative international attention as part of Ireland's globalised carbon story, wherein local objectors' clashes with police and security forces protesting the development connected the resistance campaign to other international struggles against fossil fuel extraction (e.g. the Niger Delta - Iheka 2021) (Darcy & Cox 2019). Following on from this hard-fought struggle, in 2011, the Love Leitrim Campaign, along with other anti-fracking groups North and South of the border, built a successful campaign against proposed fracking sites along the West coast and border countries. This resulted in a ban on fracking in the Republic in 2017. The issue was the risk of pollution to land, water and air, not just to protect ecosystems, but to protect environmental and human health and ensure livelihoods that relied on the land (Gorman 2022)[8]. For the most part, however, Ireland has been dependent upon carbon imports for energy. So other than peat and offshore gas, Ireland has not traditionally been seen as an energy resource-rich or sovereign country, perhaps leading commentators to downplay the role of resource extraction in the relative absence of a familiar carbon culture.

Beyond carbon-based energy resources, however, Ireland has seen the development of significant metal mining. In 1976, 4% of Ireland's exports were metals and it was Europe's largest base metal producer (mostly lead, zinc, and copper) (Kearns 1976). As the Resource Study Group, a leftist coalition consisting of Trinity College Dublin students in the early-1970s, outlined,

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[8] For an interesting document of anti-fracking protests in Ireland which contributed to Ireland becoming the first country to ban the practice, see the film *Groundswell* (aka *Home Is a Sacrifice Zone*) (dir. Johnny Gogan, 2020).

By 1970 Ireland had the largest underground zinc mine in Europe, at Silvermines; the largest producing lead mine in Europe, at Tynagh; the largest producing silver mine in Europe; one of the largest copper mines in Europe; the fifth largest mercury mine in the world, at Gortdrum; and the most profitable Barytes deposit in the world. (qtd. Irish Left Archive 2014)

The Resource Study Group notes that two Canadian multinationals had invested in Ireland's largest mines in the early-1970s, with the companies extracting tax-free profits from Ireland's resource deposits (Irish Left Archive 2014). This forgotten industrialisation of Ireland's rural areas, in the case of mining seen and promoted as an economic success story centred on Ireland's "natural" resources, has been overshadowed by later and more spectacular experiments in FDI (especially in terms of financial services). For example, in 1989 plans to mine for gold on Croagh Patrick, a sacred pilgrimage site, were successfully stopped due to the campaigning work of the Mayo Environmental Group made up of local community residents and farmers, who mobilised against not only the destruction of the mountain, but primarily the toxic cyanide pollution that would be used to extract the gold.

Today, we are seeing the next mining boom emerge around the global shift to green energy and smart technologies in the form of "critical minerals" for clean energy and tech, such as lithium, nickel, cobalt, manganese, graphite, copper, aluminium, and rare earth elements (International Energy Association 2022). Ireland has been identified as a potential "hotspot" for critical metals and minerals: 27% of the Republic of Ireland and 25% of Northern Ireland are now concessioned for mining (Cirefice 2021). The Irish Government's most recent Climate Action Plan (Government of Ireland 2021) identifies the necessity of increased mining on the island for the transition to a climate neutral economy. Dalradian Gold, a Toronto incorporated company, has been prospecting for gold in the Sperrins, where strong and internationalist resistance to this "toxic mining" enterprise have been mounted by locals (Cirefice et al. 2022). In early 2021, two new prospecting licences were granted to Chinese and Canadian mining companies to explore the lithium reserves buried in granite in the Wicklow Mountains. This multinational land grab for elements is due not only to changing material requirements of technologies in energy and digital tech - these are not necessarily "new" mineral requirements - but the simultaneous resource-intensity of emerging technologies themselves (International Energy Association n.d.). These arguments shouldn't come as a surprise, but what is interesting to us is the continuity in extractive logics across distinct phases of postcolonial development[9].

In critical environmental literature, this expansion of mining and other extractive activity for "green growth" has become known as "green extractivism" (see Bruna 2022; Riofrancos 2019; Voskoboynik and Andreucci 2021), or the material and discursive strategies that drive the expanded extraction of resources for decarbonisation, for example the mining of lithium for EV

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[9] In a recent article, aptly entitled 'Digging our way to a Just Transition' (McGrath et al. 2023), the authors identify how the exhaustion of raised bogs in the midlands provides opportunities for the extraction of 'low carbon' sand and other aggregates for the construction industry. They also speculate on the future value of other base metals, such as zinc, as new battery technologies develop as part of the green transition.

batteries. While we have focused up to this point on material extraction of resources via mining, we also have to emphasise that these forms of activity must be conceived of in more expansive ways, especially during the "smart" green transition. Cymene Howe and Dominic Boyer, for example, have theorised what they call "aeolian extractivism" in the wind energy developments of Oaxaca, Mexico, by which local residents are ultimately dispossessed of not only their land but their ability to object to these projects (2016), and also face violent subduing by security forces (Dunlap 2017). Wind is also a networked resource, requiring sophisticated and datafied measuring, sensing, and prediction to make it viable (see Bresnihan and Brodie 2021b), as well as huge tracts of land (Wade and Ellis 2022). The construction of wind farms in rural Ireland, or "wind factories" as scholar Alexander Dunlap refers to them (2017), follow familiar faultlines of rural extraction and abandonment, wherein the bogland areas that these facilities are typically built on continue to be perceived as "wasted" land if not made productive via large-scale activity. Today this takes the shape of "climate solutions" and renewable energy systems, from wind farms, to battery arrays, to data systems, to all of the infrastructures required to support the transformations in the energy system, much of which is developed by multinationals. These are each very different types of resources, embedded in different sectors and strategies, but tied to similar logics and strategies that are continuous across time.

Sinks/Pollution

Along with mining, one of the industries the state, and specifically the IDA, targeted in the 1970s and 1980s was the pharmaceutical chemical industry. Taylor (1998) argues that this was because pharmaceuticals were both more resistant to recession and capable of being promoted as relatively environmentally friendly when compared with the heavy chemicals industry. What transpired, however, is that most companies that decided to locate in Ireland chose to transplant the most hazardous aspect of their production process here (Keohane 1987), proliferating what environmental scholars refer to as "sacrifice zones" for toxic activities of mining and manufacturing across Ireland's rural regions (see Lerner 2012). Taylor (1998, 59) writes that

> whether the IDA's policy was designed to create a pollution haven is open to question, but few would deny that the perception among multinationals was that Ireland was unlikely to jeopardise potential investment through stringent environmental controls. As one Director of a pharmaceutical company succinctly noted: 'we wanted a place with a similar infrastructure to the home country without so many government restrictions.' (cited in Allen and Jones 1990, 257)

Robert Allen's *No Global: The People of Ireland vs. the Multinationals* (2003) offers one of the few comprehensive accounts of the most prominent and significant campaigns against the harmful environmental pollution associated with pharmaceutical industries in Ireland in the 1980s and 1990s. While these environmental conflicts and social movement campaigns are less well-known than high-profile campaigns like Shell-to-Sea, the "anti-toxics" movement, as Allen describes it, can claim significant successes, including blocking major industry developments and playing a decisive role in the setting up of the EPA in 1993.

An early success of anti-toxics campaign groups was the decision by Raybestos Manhattan to pull out from its Cork-based operations in 1980. As the name suggests, the company used asbestos in its production process, exposure to which can cause a number of lung diseases including asbestosis and mesothelioma. The company had been experiencing financial difficulties due to the wave of environmental regulations (including occupational health in the workplace) that had been introduced in the US in the early 1970s. Attracted to Cork in part by the deep harbour, the other main appeal was access to efficient, cheap and long-term methods for disposal of toxic waste by-products. According to Baker (1987), the IDA was aware of this and saw that one of the keys to attracting such companies into the Cork Harbour area would be the provision of a state-monitored toxic dump. But in 1972 Ireland did not possess such a dump and the provision of one would be the focus of local community opposition. In 1978, this led to outright conflict between the police and the local community as the first Raybestos trucks attempted to use the dump for their waste (RTE 1978). Raybestos pulled out of the area two years later.

While opposition to specific chemical facilities always carried a place-based, local force, they also developed connections with other campaigns. Susan Baker (1987) shows that 18 different groups were involved in the Raybestos campaign - including residents associations, the Irish Anti-Nuclear Movement and more politically radical groups like Revolutionary Struggle. As in other parts of the world, fears of chemical pollution were linked with fears around radioactive pollution and nuclear energy. State plans to build a nuclear reactor in Carnsore Point in County Wexford were resisted in the late 1970s, with two major concerts happening in 1978 and 1979. At the same time, another campaign arose in response to the Anglo-Australian company Rio Tinto trying to mine for uranium in County Donegal. These groups helped foster an "anti-toxic industry movement" across Ireland - and here, the connections between extractive industries like mining, risks associated with pollution and state regulation become apparent.[10]

The establishment of the EPA in 1993 was a key moment in the state's response to growing public concern and community campaigns against toxic pollution linked to chemical manufacturing. Institutionalising "allowable" amounts of pollution served to contain public concerns within the technical domain of measurable environmental pollutants, risk and harm (see Zahara 2018). But concerns haven't gone away, nor have campaigns organised to challenge formal expertise and state and corporate assurances of risk management and control. The Aughinish refinery in Askeaton, Co. Limerick, for example, Europe's largest bauxite refinery, has been subject to repeated complaints and concerns from local residents about human and animal illnesses (Lehane 2002). Despite the 350 acre site of red, hazardous waste (visible from satellite images), the EPA has recently granted permission for the refinery to expand its production (and toxic waste) with no clear social or environmental transition programme in place (Horrigan 2021).

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[10] It should be noted that, although unfortunately beyond this analysis, the same schism that created the Free State - the partition of Ireland, and the creation of the devolved statelet of Northern Ireland - also laid the groundwork for an environmentally unjust and extractivist regime of accumulation there, although with different characteristics (see Cirefice 2021 and Hwang 2022). Northern Ireland currently hosts the largest illegal dump in Europe, just outside of Derry. There is significant potential for the forging of environmental justice alliances across the island of Ireland (and beyond), especially with regards to mining, as the group Communities against the Injustices of Mining (CAIM) have been doing.

This section does not seek to silo toxic pollution and its logics of waste sacrifice zones within manufacturing only. After all, mining also leaves behind toxic residues, whether it is gold, uranium, or lithium, and the infrastructures discussed in the following section similarly rely on a waste/value relation that is necessarily waste*ful* and is increasingly concerned with transforming it into value via circular economies and optimised supply chains. But the above industrial histories of pollution "sinks" should make us wary of the planetary implications of treating landscapes as climate sinks (see Gabrys 2009; Tar 1996), for example in the transition from "mine to sink" in the Irish peatlands with multinational interest and investment in carbon sequestration projects (Bresnihan and Brodie 2023). Treating peatlands through their "natural capital" and "ecosystem services" potentials participates in an emerging form of resource-making by which value can be extracted remotely by multinational companies via carbon credits (see Robertson et al. 2023). Irish peatlands are slated to enter carbon markets by the mid-2020s, meaning that while they will no longer necessarily be the site of heavy industrial activity - although they will also be that through wind farms and potentially data centres - they will act "passively" as hectare-by-hectare offsets for heavy industrial emissions elsewhere. Like the heavy industrial extraction noted in the above section, what this means is that the extractive logic becomes more networked in its distributed and opaque supply chains. Landscapes and their ecologies are further entangled with financial markets, facilitating remote value extraction, and enabling toxic multinational activities somewhere else via carbon crediting.

Infrastructures
In the late-1950s, entrepreneur Brendan O'Regan, with the later support of the Irish state under Seán Lemass, proposed the model of a tax-free export-processing zone in Shannon, County Clare, in the west of Ireland (see Callanan 2000; O'Connell and O'Carroll 2018). With innovations in commercial flight technology for transoceanic travel, there were worries that the existing Shannon Airport, used as a stopover between North America and the European continent, would cease to be viable without other reasons to keep people in Shannon. This fly in, fly out manufacturing logic in the Shannon Free Zone, facilitated by a territorially demarcated and exceptionally low tax rate, has been commented upon in terms of its exceptional success and transplantation into other contexts in the global south (see Easterling 2014). Aihwa Ong argues that these export-processing zones demonstrate "graduated" or "variegated" sovereignties that extrude sovereign rule into global spaces, exposing workers and environments to extreme forms of often overlapping governance via capital (2006). This form of governance *by* capital is actually representative of continuous Irish strategies of private infrastructural provision. An exaggerated version of this, Shannon was effectively a private company town run by Shannon Development until the early-2000s - it was governed separately from Clare County Council, with the semi-state development corporation only then handing over governance. While there were no major controversies befalling the Shannon Free Zone (arguably until Shannon Airport came under fire for allowing US military aircraft to land there), it is nonetheless a troubling form of territorial governance by a partially profit-driven "development" corporation.

Infrastructures like Shannon, while discussed as a kind of aborted experiment in regional development, thus represent a far deeper ideology of Irish development than perhaps it is given credit for, and especially in the sense that the ability to participate in a global system and bring in

foreign capital bulldozes other potential possibilities for rural viability (not to mention the regulatory problems for labour and the environment). One pertinent example is the Asahi synthetic fibre plant in Killala, Mayo, established in 1977 and operating until 1997. As John Healy narrates the story of the Japanese multinational locating there, "[t]he proposal was welcomed with open arms, and everything was done to smooth the path. A 400-acre site for the plant was secured; Mayo County Council rushed through a € 1.6 million water-supply scheme to provide the plant with the 20 million gallons of water it needed per day; and efforts to recruit 500 workers, most of them from the area, swung into action" (n.d.). The involvement of the IDA and the County Council in the buildout of significant amounts of water infrastructure to supply its facilities stands in stark contrast to water provision for the rest of the region, where group water schemes have represented a kind of community-based solution to those otherwise lacking state utilities, a condition which comes from much longer histories of infrastructural underdevelopment (see Bresnihan et al. 2021; Bresnihan 2019). The state's primary development strategies for rural areas today are centred around attracting more of these sorts of multinational investments, with significant infrastructural provision for private industry occurring under superficial state remits towards "public" good provided via the model of FDI-for-development[11].

The Intel plant in Leixlip also demonstrates a shift to flexible manufacturing, which rather than slowing down resource-intensive activities, actually become more *infrastructurally* intensive over time. For example, Intel's approved expansion plan in Kildare will account for between 7-9% of national electricity demand when it is built, equivalent to four times as much power as Galway city uses. Similarly, stalled plans to build a €1.2 billion, 160 km water pipeline to bring water from the Shannon to the Greater Dublin Region have been strongly supported by the IDA, eager to ensure that Ireland's water infrastructure can support water-intensive FDI operations like those at Intel (Siggins 2016). The significance of this is not just the quantity of energy or water, but that it requires physical infrastructures to be built by publicly owned utilities to bring resources to the plant, infrastructures that in turn require land, which is often where conflicts surface. It also suggests that as Intel's flexible manufacturing develops, there is less need for a human workforce - more energy typically means more automation. In other words, the expansion of the facility is not about local or regional development in terms of jobs, but about access to public/private infrastructures, cheap utilities and low corporate tax rates. It is in this context that the *ecological* dimensions of Ireland's FDI-led development policy become so much more important, and how these interlocking ecological, infrastructural, and financial relationships can and should be viewed as part of any conversations here on global climate justice.

Thus, as we can see in these examples of manufacturing and its modes of wringing and exporting value by utilising Ireland's infrastructural resources, this expanded sense of extraction described above has helped scholars understand how these value relations expand into unexpected areas

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[11] Today, the former Asahi site has been put forward by Mayo County Council as a potential data centre development opportunity, pairing nearby wind energy, a renewable biogas plant, a multinational fibre optic cable landing, with a potential data facility - all to administer a new industrial and infrastructural formation of smart, green technology and remediate an area that has experienced deindustrialisation.

of human activity (see Chagnon et al. 2022). Media studies scholars, for example, have frequently described the phenomenon of "data extraction" through networked mechanisms of data collection enabled by digital systems, by which data is essentially "refined" and naturalised as a resource (see Couldry and Mejias 2019; Srnicek 2016; Taffel 2021). The "data/energy nexus" of digital technologies and renewable energy is both infrastructural and epistemological in its continuation and innovation of these resource logics, as the extraction, wasting, and manufacturing in the form of data centres represents the intersection of many of the earlier developments traced above. Data centres, their enabling of AI and cloud migration, and their organisation of the various infrastructural resources required to operate them, are the logical development of FDI strategy in Ireland. In fact, in the intersections between manufacturing and services, these facilities represent an automated version of these strategies through datafied infrastructure and the enabling of utilities privatisation.

Related to the development of the EPA described above, the regulatory responses to data centres have similarly mediated relationships between capital and the environment in Ireland, whether through attempts to deregulate the planning process (removing barriers to development by putting up barriers to objection) or expanding the remit of data centre companies to get involved in energy provision (introducing programs and incentives to ensure that data centre companies invest in renewable energy, grid flexibility solutions, or district heating schemes with waste heat). Data centres have overwhelmed the grid, to the degree that Eirgrid, following a recommendation from the Commission for the Regulation of Utilities (CRU, 2021), introduced a de facto moratorium on new data centre connections in the Dublin region in 2021. The CRU recommendations detail the ways that data centres should provide their own on-site energy, enter corporate power purchase agreements, and/or locate outside of Dublin, which introduces the possibility of rural "energy parks" run on circular data/energy pathways. But while companies have known that they will have to locate outside of Dublin, and these urban/rural political ecologies of data/energy have existed for a while (Bresnihan and Brodie 2021a), the energy crunch in Dublin is accelerating the focus on rural areas[12].

Across these different sites, the state and its semi-state organs propose technical responses to the material contradictions brought about by the state's own economic development strategies. Organisations like the IDA recognise these contradictions and the need for "solutions" and "innovations" but identify the contradictions themselves as the result of a lack of multinational investment. On the industry side, companies and think-tanks are innovating ways to make data centres essential to grid transformation, arguing that data centres, their energy connections, and their backup battery arrays can actually contribute to grid flexibility and responsivity, particularly as regards intermittent renewable energy like wind and solar. Google has for several years been working publicly on generation and grid responsive computing at its facilities as part of its decarbonisation strategies. Microsoft's data centres in Ireland have already begun projects

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[12] For example, Bord na Mona's proposed Energy Parks will place renewable energy, battery storage, and "large energy users" like data centres on the same sites, creating an eco-industrial "just" transition for the midlands and former cutaway boglands in the image of big tech. Similar to the Asahi site, this is seen as a solution to both the need for renewable energy transition and the provision of jobs and prosperity for communities once dependent on the peat industry and its offshoots.

geared towards grid flexibility via on-site energy storage (Roach 2022), and will soon be responsible for 30% of CPPAs in the country, agreements poised to be a significant (and as the story goes subsidy free) contributor of new renewable energy to the grid over the next several years. However, these agreements provide no grid "additionality," as that energy is simply offsetting the existing or planned use of data centres, and, further, allow big tech companies to lock in their energy prices at low, agreed-upon rates for extended periods of time. The promotion of big tech and data centres as essential components of Ireland's decarbonisation, despite their colossal energy-use, offers a perfect illustration of the techno-optimism at the heart of eco modernist ideology and policy proposals. What is more, these so-called technological solutions are derived from the industry itself, creating new commercial opportunities within a virtuous 'circular economy' of continued 'green' growth.

We have, then, a familiar scenario: the grid is overburdened and decarbonisation targets are unmet due to a history of underdevelopment and lack of investment in public infrastructure and renewable energy. The state's development strategy is to further enable private, energy intensive infrastructures to locate here and hope that they can provide the technological solutions needed. Rather than identify solutions to these critical climate and energy problems that can benefit those most affected and most vulnerable to energy poverty, e.g. energy consumers in rural areas requiring their own decarbonisation support, the state argues that the grid needs to be updated, optimised, via private *investment* in supply and storage capacity, in order to ensure that data centres can still operate here, requiring the expansion of extractive infrastructures into rural areas to accommodate these needs. How has the logic of provision become so detached from the central realities of contemporary life that governance essentially loses its remit towards the public good, ensuring that tech companies, for example, mediate consumer/state relationships? In the final section, we will analyse some of the consequences of these pro-development strategies through their material politics on-the-ground across a few examples since the 1970s.

Environmental and Infrastructural Struggle across the Urban/Rural
In this section we focus on the sites, subjects and political cultures that have taken shape in response to the harmful effects of FDI-related environmental transformations. The insights and examples we draw on here are taken from the secondary literature but also our own field work over the last number of years. A key argument we want to make in this section is that while the forms of resistance that arise, and their political articulation, are diverse and often ambivalent, they stem from deep-seated grievances relating to state development policy. Drawing on Tovey's concept of "populist environmentalism" again (1993), these struggles are rooted in community resistance to external interference and feelings of democratic exclusion from decision-making that affects their lives and livelihoods, grievances borne out of a very identifiable sense that infrastructures and development in their areas does not actually benefit them. The ambivalence lies in a strain of conservatism that arises from place-based environmental politics, territorial and community-based identity, and anti-state sentiment. But this is combined with an outward-looking perspective that has often involved forging links with national and transnational movements critical of neoliberal globalisation. A major motivation for this article is not just to foreground the significance of these largely rural-based, populist environmental justice campaigns, but to demonstrate the need for greater coalition and alliance-building capable of articulating these

grievances with more progressive visions of local and national development and global eco-social alternatives (see Ajl 2021).

In analysing these movements, we want to emphasise that it is not just "development" and "progress" that is at stake within transitions from fossil fuels and polluting industries to renewable energy and climate solutions: these projects are happening in *places*, places which have experienced long histories of de-development and over-development as enacted across what we call the postcolonial ecological regime - these include the simultaneous under development of vital infrastructures, such as water provisioning, and the over development of private, industrial facilities and activities (see Bresnihan & Hesse 2021). These emplaced relations matter for understanding the chronic conditions extending across the last 40+ years of Irish economic development (though rooted in longer colonial histories). Only by understanding this can we understand the kinds of political cultures that take shape, whether or not communities overtly connect their grievances to a longer history of colonisation, postcolonial underdevelopment, and networks of multinational capital - such as the case in the anti-mining campaigns forming around the Communities against the Injustices of Mining (CAIM) network on the island - or anti-wind objectors who argue that the liveability and viability of their communities are being affected by these huge facilities.

Uniting these contexts and histories in Ireland under the umbrella of extractivism, within the wider managerial strategies and histories of Ireland's postcolonial ecological regime, we argue, goes a long way towards understanding not only how we got here, but how to move forward with anti-extractivist movements on the island in relation to emerging modes of green extractivism. Wind and battery farms in the rural northwest, for example, are largely being designed to support the growing demand of "smart" infrastructures like data centres and EVs and intermittency in the grid, respectively. Where are the corresponding supports for the electrification of rural heating systems? Or the protection of the often-fragile ecosystems affected by large-scale developments in whatever form? What are the capacities for democratic ownership of these energy supplies and other environmental futures?

Of course, campaigns around extractivism and their goals are often ambivalent. It is not always the same people affected, and the range of experiences are diverse across many different spaces in Ireland. In Athenry, for example, Apple tried to develop a €850 million data centre facility in spite of faulty EIAs, which found that their promised ability to supply the facility with 100% renewable energy were untrue and that the EIA had only accounted for the energy usage of a fraction of its proposed development. Residents, hopeful for the prosperity that such a project could bring in the face of an area largely abandoned by state projects, nonetheless supported the project and saw it as an environmentally responsible alternative to other industries, and became frustrated with the planning process that allowed two environmental objectors to hold up the project until Apple withdrew (see Brodie 2020). In Ennis, on the other hand, where a company attempted to build a gas-fired data centre facility, residents felt like they were becoming a sacrifice zone for polluting infrastructures because of the data centre and its movement through the planning process. The campaign Futureproof Clare against the Shannon LNG got involved and connected the local issue to wider and even planetary environmental justice. It is a similar story

for wind across the board, where groups are united by their opposition to the forms of development that enable large-scale wind farms to go up but sometimes have very different visions of the future. This means campaign groups involve community actors, some of whom are anti-renewables in general and others who have real material concerns for the local environment that are not necessarily at odds with the development of renewable energy in Ireland.

There are histories of materially disrupting large-scale developments, which have been successful at least in galvanising local communities against extractive multinational investment (see Allen 2004; Barry and Doran 2016). Shell to Sea famously involved direct actions and confrontations with the police and security forces, which ultimately led to imprisonment of the Rossport Five. But other, less spectacular tactics are more frequently used, whether chopping down sitka spruce plantations in west Cork or raising cartoonish objections to an undersea cable passing through local fisheries (see Bresnihan and Brodie 2021a, 243-244). These often deliberately obtuse modes of disruption can perhaps be seen as a response to efforts by the state to mediate conflicts through technical instruments and frameworks of "expertise" which marginalise the forms of livelihood and even knowledge that rural communities have. In response, the state has usually stepped in to deregulate, or create barriers to participation, through "strategic" or "critical" spatial planning designations which have functioned to exhaust and discourage objectors seen to be slowing down the process. But in spite of these constantly emerging barriers, communities have also developed repertoires of knowledge that allow them to find loopholes, ways to delay projects, deliberate obtuseness to gum up the planning works - e.g. the case of a wind farm in Longford (O Faolain 2021), designated to be built on a former Bord na Mona site, that sent "shivers" up the spine of those in the wind energy industry (personal communication). Ultimately though, this back and forth is exhausting and resource-intensive for under-resourced campaign groups that usually have very little resources and are limited in their ability to secure external funding and legal support. The state uses this strategy of exhaustion to wear down communities, as has been clear to environmental campaigners for years (see Allen 2004), and it is hard to prevent defeatism from infiltrating movements.

We should emphasise that trying to understand these places and political cultures is not just an academic analysis. If you look at the campaigns and networks that have grown out of these place-based struggles, from anti-fossil fuels Shell-to-Sea (connections with internationalist struggles and alter-globalisation) to anti-LNG Futureproof Clare (growing to encompass anti-data centre activism) to anti-mining in the Sperrins (CAIM and connections with the Zapatistas and water protectors in North America) to anti-wind campaigns across the island (increasingly aware of relations to the tech industry and wider changes in the energy system), people understand that these are connected to more-than-local struggles about what the future looks like from an environmental standpoint. Here we think it is useful to connect these experiences and grievances with anti-extractivist politics in other parts of the world. Not to render them equivalent, but to show how the particular economic activity (wind farm, mining, data centres) is less significant than the prevailing logic of extractivism. This extractive logic is a decisive thread linking colonial and postcolonial relations to the rural, in Ireland and elsewhere. Seeing and enrolling places as resource-scapes requires a whole set of processes that both devalue and obscure existing or alternative relations to place, including livelihoods and forms of sociality, as well as transforming

complex ecologies and landscapes into particular resources, whether land, wind, water or mineral (Gomez-Barris 2017). More than anything, we would argue, this resource logic, which is necessary for any extractive economic systems, defines the Irish state's relationship to the rural.

The rural, and specifically in Ireland, the way that the state has mediated multinational environmental relationships at the expense of these particular places, has tended to be a bit of a blind spot in recent environmental and left activism. One reason for this is that some of these struggles have ambivalent political orientations. Leonard (2008) provides the useful idea of "rural sentiment" to describe the deeply felt and emplaced feelings of resentment and grievance towards "big" projects seen to be imposed from outside. Considered in the context of 2022, "rural sentiment" is just as easily expressed in opposition to accommodation for asylum seekers as it is opposition to a Canadian mining company. It is a dangerous and potent ground for social mobilisation and needs to be recognised as such. We can already see this ambivalence in projects like Athenry, which has to be understood as unfolding in the context of state underdevelopment of rural regions, opening the door for multinationals to establish extractive enterprises under the guise of green, smart development, and all of the fundamental contradictions that that entails.

If we as scholars and activists do not start to get involved in understanding and articulating how these contexts are aligned, from Cork to Leitrim to Galway to Antrim, alternative narratives and connections will be made and capitalised upon by much more nefarious actors - whether multinational actors or the far right. This is a huge question to confront, but it is absolutely central to think about in terms of key issues of land politics, resource sovereignty, decolonisation, self-determination, and other difficult and ambivalent terms concerning Ireland's place within ongoing imperial capitalist networks. If we can show that different struggles in Ireland are aligned, from climate justice to tax justice, as NGOs and activist groups are already doing (not to mention multinational companies trying to get ahead of publicity and regulation), these alignments can begin to chart a way forward in the face of apparently irresolvable material, environmental contradictions[13].

Conclusion

Across its colonial and postcolonial histories, Ireland has acted as a sacrificial, experimental site for particular kinds of capitalist activity, in ways that arguably extend today through the forms of investment operating here. But it is at the same time an extremely developed European economy, with a state active in the facilitation of these activities and the (mis)management of the environmental contradictions that arise. The simultaneity of over- and under-development creates points of environmental conflict and struggle that need to be understood and theorised through the particular context and unique development of postcolonial Irish capitalism. These contradictions in the landscape and political economy of place characterise the simultaneity and entanglement of extreme forms of global development with the enduring fallout (and resistances) of earlier political, economic, and ecological relationships.

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[13] Consider, for example, the work of Ruth Wilson Gilmore, working in a very different context of prison abolition in the United States. She documents how environmental justice groups and abolition groups in California have worked together against the building of large prison complexes, seen as "industries of last resort" for areas starved of alternative investment and development opportunities (2022).

Rural Ireland, as enrolled within and affected by Ireland's postcolonial ecological regime, is a place where we can find and unpack these contradictions in ways that are interesting, profound, and troubling, in the sense that the infrastructural forms and political cultures that arise constantly thwart expectation and lead down strange political pathways. This goes beyond what geographer Robert Woods calls "the global countryside" (2007) and into a deeper history and configuration of colonial and postcolonial relationships on the island as activated through environmental politics. We see this as ambivalent, productive, and a good problem for research, rather than an irresolvable or repelling issue, which has sometimes led people to avoid the issue of the (post)colonial in Irish social sciences. In spite of the state's wholesale adoption and enthusiastic reproduction of the economic models of global capital, we need to simultaneously understand the structures of dependency as they map onto and scar the landscape through ongoing internal and geographical inequalities and imbalances. The responses of the state to these contradictions must be seen as a continuously evolving set of circumstances that are nonetheless inextricable from these much longer histories. We hope this article will thus be of value to scholars trying to understand why (and where) things happen in Ireland the way they do, to paraphrase Gilmore's definition of geographical method (2020).

We are thus making a political and an academic argument in connecting apparently disconnected spheres of analysis as well as sites of struggle. In doing so, we are also putting different scholars in conversation with one another who would typically not be found on one another's reference lists, trying to create a venn diagram of affinities to understand how the Irish state is materially implicated within the operations of multinationals through the environment in Ireland. To do so, we need to understand these longer histories and concepts represented across this work, but also how contradictions continue to mount in various spheres of social, economic and political activity. Although these sites (e.g. mining, wind farms, data centre development) seem separate, the logics of development (and the subduing of dissent) are consistent, and thus represent a shared object of environmental struggle for various campaigns that we reference above.

The Irish state's bargain with empire in the selling of its environment and infrastructure to global capital has been key to its development. This does not just mean that Ireland is part of a global capitalist empire that reproduces the forms of inequality on which it is based, but also that it does so *within* Ireland and across its uneven geographies, which began with a tax regime that first facilitated polluting industries such as mining and manufacturing and distributed the burden of these industries and lack of public infrastructures unevenly across the country. Decolonial environmental projects in Ireland should start with the people and places most affected by these ongoing structural dynamics, the geographies of core/peripheries (and how this maps onto rural/urban) and how this connects to this global system of exploitation as it operates through this place, its state, and its capitalist landscape. Only then can a truly coalitional approach across multiple sites and forms of struggle against extraction, in Ireland and connected to global and planetary environmental politics, take shape.

References
Ajl, Max. 2021. *A People's Green New Deal*. Pluto Press.

Allen, Robert. 2004. *No Global: The People of Ireland vs. the Multinationals*. Pluto Press.

An Taisce. 2022. "Housing and Planning and Development Bill."
https://www.antaisce.org/2022-submission-on-housing-and-planning-and-development-bill.

Baker, S. (1987). Dependent industrialization and political protest: Raybestos Manhattan in Ireland. Government and Opposition, 22(3), 352-358.

Barry, J., & Doran, P. (2016). Environmental Movements in Ireland: North and South. In A Living Countryside? (pp. 341-360). Routledge.

Bhandar, Brenna. 2020. "Lost property: the continuing violence of improvement." *The Architectural Review*, 8 October.
https://www.architectural-review.com/essays/lost-property-the-continuing-violence-of-improvement.

Bresnihan, Patrick, Arielle Hesse, and James Merricks White. 2021. *Learning from Group Water Schemes: Community Infrastructures for Sustainable Development*. EPA Research, Report No. 364.

Bresnihan, Patrick & Hesse, Arielle. 2021. Political ecologies of infrastructural and intestinal decay. *Environment and Planning E: Nature and Space*, 4(3), 778-798.

Bresnihan, Patrick. 2019. Water, our relative: trauma, healing and hydropolitics. Community Development Journal, 54(1), 22-41.

Bresnihan, Patrick and Patrick Brodie. 2021a. "Contested States: Emerging Rural Geographies of Data and Energy in Ireland." In *States of Entanglement: Data in the Irish Landscape*, edited by Annex. Actar.

Bresnihan, Patrick and Patrick Brodie. 2021b. "New Extractive Frontiers in Ireland and the Moebius Strip of Wind/Data." *Environment and Planning E: Nature and Space*, vol. 4, no. 4: 1645-1664.

Bresnihan, Patrick and Patrick Brodie. 2023. "Data Sinks, Carbon Services: Waste, Storage, and Energy Cultures on Ireland's Peat Bogs." *New Media and Society*.

Brodie, Patrick. 2020. "'Stuck in Mud in the Fields of Athenry': Apple, Territory, and Popular Politics." *Culture Machine*, vol. 19.
https://culturemachine.net/vol-19-media-populism/stuck-in-mud-in-the-fields-of-athenry-patrick-brodie/.

Brodie, Patrick. 2021. "Hosting Cultures: Placing the Global Data Center 'Industry.'" *Canadian Journal of Communication*, vol. 46, no. 2: 151-176.

Bruna, Natacha. 2022. "A climate-smart world and the rise of Green Extractivism." *Journal of Peasant Studies*, vol. 49, no. 4: 839-864.

Carroll, Clare and Patricia King, editors. 2003. *Ireland and Postcolonial Theory*. Notre Dame Press.

Chagnon, Christopher W., Francesco Durante, Barry K. Gills, Sophia E. Hagolani-Albov, Saana Hokkanen, Sohvi M. J. Kangasluoma, Heidi Konttinen, Markus Kröger, William LaFleur, Ossi Ollinaho and Marketta P. S. Vuola. 2022. "From extractivism to global extractivism: the evolution of an organizing concept." *The Journal of Peasant Studies*, vol. 49, no. 4: 760-792.

Cirefice, V'Cenza. 2021. "Women Keeping Ireland's Gold in the Ground." *The Ecologist*, 20 July. https://theecologist.org/2021/jun/10/women-who-keep-gold-irelands-ground.

Cirefice, V'Cenza, Sinead Mercier, Aideen O'Dochartaigh. 2022. "Resistance to mining and pathways to a sustainable rural environment: Rewriting the maps." In Attorp, Adrienne, Sean Heron, Ruth McAreavey (Eds.). *Rural Governance in the UK*, pp. 99-119. Routledge.

Cleary, Joe. 2022. "Irish Postcolonial Studies: 1980-2021." *Radical History Review*, vol. 143: 15-31.

Commission for Regulation of Utilities. 2021. "CRU Direction to the System Operators related to Data Centre grid connection processing." 23 November. https://www.cru.ie/wp-content/uploads/2021/11/CRU21124-CRU-Direction-to-the-System-Operators-related-to-Data-Centre-grid-connection-processing.pdf.

Connolly, Linda. 2004. "The limits of 'Irish Studies': historicism, culturalism, paternalism." *Irish Studies Review*, vol. 12, no. 2: 139-162.

Couldry, Nick and Ulises A. Mejias. 2019. *The Costs of Connection: How Data Is Colonizing Human Life and Appropriating It for Capitalism*. Stanford University Press.

Cronin, Nessa. 2012. "Geographies of Hunger: Colonialism and the Political Economy of An Gorta Mor." *Dialogues in Human Geography*, vol. 2, no. 1: 79-81.

Cronin, Nessa. 2014. "Writing the 'New Geography': Cartographic Discourse and Colonial Governmentality in William Petty's *The Political Anatomy of Ireland* (1672)." *Historical Geography*, vol. 42: 58-71.

Cronin, Nessa. 2020. "Achillhenge: Liquid Modernity and an Archaeology of the Irish Anthropocene." *Éire-Ireland*, vol. 55, no. 3-4: 19-43.

Darcy, Hilary & Cox, Laurence. 2019. Resisting Shell in Ireland: making and remaking alliances between communities, movements and activists. In *Environmental Justice, Popular Struggle and Community Development* (pp. 15-28). Policy Press.

Deckard, Sharae. 2016. "World-Ecology and Ireland: The Neoliberal Ecological Regime." *Journal of World-Systems Research*, vol. 22, no. 1: 145-176.

De Loughry, Treasa, and Mike McCormack. 2019. "'…a tiny part of that greater circum-terrestrial grid': A Conversation with Mike McCormack." *Irish University Review*, vol. 49, no. 1: 105-116.

Dunlap, Alexander. 2017. "Wind Energy: Toward a "Sustainable Violence" in Oaxaca, Mexico." . *NACLA Report on the Americas*, vol. 49: 483-488.

Eagleton, Terry, Fredric Jameson, and Edward Said. 1990. *Nationalism, Colonialism, and Literature*. University of Minnesota Press.

Easterling, Keller. 2014. *Extrastatecraft: The Power of Infrastructure Space*. Verso.

Fearon, S., & Barry, J. (2022). Beyond growth and partition: post-growth and ecological perspectives on the political economy of Irish reunification. Irish Studies in International Affairs, 33(2), 372-404.

Fuilálainn, Críostóir. 2022. "The Saorstát is a Neo-colony." *Rupture: Eco-Socialist Quarterly*, 25 October. https://rupture.ie/articles/the-saorstat-is-a-neo-colony.

Gabrys, Jennifer. 2009. "Sink: The Dirt of Systems." *Environment and Planning D: Society and Space*, vol. 27, no. 4:

Garavan, M. (2007). Resisting the costs of 'development': local environmental activism in Ireland. Environmental Politics, 16(5), 844-863.

Gibbons, Luke. 1996. *Transformations in Irish Culture*. Notre Dame Press.

Gilmore, Ruth Wilson. 2022. *Abolition Geography: Essays towards Liberation*. Verso.

Gilmore, Ruth Wilson. 2020. "Ruth Wilson Gilmore Makes the Case for Abolition." Interviewed by Chenjerai Kumanyika. *The Intercept*, 10 June. https://theintercept.com/2020/06/10/ruth-wilson-gilmore-makes-the-case-for-abolition/.

Gladwin, Derek. 2016. C*ontentious Terrains: Boglands, Ireland, Postcolonial Gothic*. Cork University Press.

Gómez-Barris, Macarena. 2016. *The Extractive Zone: Social Ecologies and Decolonial Perspectives*. Duke University Press.

Gorman, J. (2022). Rooting and reaching: insights from Love Leitrim's successful resistance to fracking in Ireland. Community Development Journal, 57(1), 17-39.

Government of Ireland. 2021. *Climate Action Plan 2021: Securing Our Future*. Department of the Environment, Climate and Communications.

Günel, Gökçe. 2019. *Spaceship in the Desert: Energy, Climate Change, and Urban Design in Abu Dhabi*. Duke University Press.

Guha, R., & Alier, J. M. (2013). Varieties of environmentalism: essays North and South. Routledge.

Healy, John. N.d. "Asahi and the Mayo Venture." *The Mayo News*. https://www.mayonews.ie/comment-opinion/down-memory-lane/31945-asahi-and-the-mayo-venture.

Hogan, Liam, Laura McAtackney, and Matthew C. Reilly. 2016. "The Irish in the Anglo-Caribbean: servants or slaves?" *History Ireland*, vol. 24, no. 2 (March/April). https://www.historyireland.com/the-irish-in-the-anglo-caribbean-servants-or-slaves/.

Horrigan, Michelle. 2021. *Stigma Damages*. https://michelehorrigan.com/project/stigma-damages/

Howe, Cymene and Dominic Boyer. 2016. "Aeolian Extractivism and Community Wind in Southern Mexico." *Public Culture*, vol. 28, no. 2: 215-235.

Hwang, Junseo. 2022. *The Road Not Taken: 'Triple Transformation' towards Sustainable Peace in Northern Ireland*. Queen's University Belfast, PhD dissertation.

Iheka, Cajetan. 2021. "The media turn in African environmentalism: the Niger Delta and oil's network forms." *Journal of Visual Culture*, vol. 20, no. 1: 60-84.

International Energy Association. N.d. "Critical minerals: The role of critical minerals in clean energy transitions." https://www.iea.org/topics/critical-minerals.

International Energy Association. 2022. "The Role of Critical Minerals in Clean Energy Transitions: Executive Summary." https://www.iea.org/reports/the-role-of-critical-minerals-in-clean-energy-transitions/executive-summary.

Irish Left Archive. 2014. "Left Archive: Irish Mining – The Need for Action: A Case Study of Exploration, Resources Study Group, 1970." *The Cedar Lounge Revolution*, 9 June. https://cedarlounge.wordpress.com/2014/06/09/left-archive-irish-mining-the-need-for-action-a-case-study-of-exploration-resources-study-group-1970/.

Kearns, Kevin C. 1976. "Ireland's Mining Boom: Development and Impact." *The American Journal of Economics and Sociology*, vol. 35, no. 3: 251-270.

Keohane, Kieran. 1987. 'Dependent Industrialisation, Crisis Transfer and Crisis Displacement: The Transnational Pharmaceutical Industry and the Irish Republic', unpublished MA thesis, University College Cork, Ireland.

Kiberd, Declan. 1996. *Inventing Ireland: The Literature of a Modern Nation*. Vintage.

Lehane, Michael. 2002. Pollution linked to health. The Irish Examiner. 9th July. https://www.irishexaminer.com/news/arid-10049169.html Last accessed 1st December 2022.

Leonard, Liam. 2007. *The environmental movement in Ireland.* Springer Science & Business Media.

Leonard, L. 2008. Rapid development & community mobilisation in the Republic of Ireland. Community Development, 39(3), 59-74.

Lerner, Steve. 2012. *Sacrifice Zones: The Front Lines of Toxic Chemical Exposure in the United States*. MIT Press.

Lloyd, David. 1993. *Anomalous States: Irish Writing and the Post-Colonial Moment*. Duke University Press.

Lloyd, David. 2003. "Rethinking national marxism: James Connolly and 'Celtic Communism.'" *Interventions: International Journal of Postcolonial Studies*, vol. 5: 345-370.

McAtackney, Laura. 2022. "A Suitable Place to Remember? Derelict Magdalen Laundries as Possible Sites of Conscience in Contemporary Ireland." *Space and Culture*, vol. 25, no. 2: 266-281.

McCabe, Conor. 2011. *Sins of the Father: Tracing the Decisions that Shaped the Irish Economy*. The History Press.

McCabe, Conor.. 2022. Apple and Ireland, 1980–2020: A Case Study of the Irish Comprador Capitalist System. Radical History Review, 2022(143), 141-148.

McGrath, E., O'Donnell, E., & Torremans, K. (2023). Digging our way to a Just Transition. Geological Society, London, Special Publications, 526(1), SP526-2022.

McVeigh, Robbie and Bill Rolston. 2021. *Ireland, Colonialism, and the Unfinished Revolution*. Beyond the Pale Books.

Mercier, Sinéad. 2022. *Men Who Eat Ringforts: A Reflection on Environmental and Heritage Destruction in the Modernist Lawscape*. Askeaton Contemporary Arts.

Mezzadra, Sandro and Brett Neilson. 2019. *The Politics of Operations: Excavating Contemporary Capitalism*. Duke University Press.

Moore, Jason. 2015. *Capitalism in the Web of Life: Ecology and the Accumulation of Capital*. Verso.

Mustafa, Shakir. 1996. "Revisionism and Revival: A Postcolonial Approach to Irish Cultural Nationalism." *New Hibernia Review*, vol. 2, no. 3: 36-53.

O'Connell, Brian with Cian O'Carroll. 2018. *Brendan O'Regan: Irish Innovator, Visionary, and Peacemaker*. Irish Academic Press.

O Faolain, Aodhan. 2021. "Court quashes permission for proposed Longford windfarm, the joint-tallest structure in Ireland." *Journal.ie*, 16 June. https://www.thejournal.ie/permission-longford-windfarm-5468852-Jun2021/.

O'Hearn, Denis. 2001. *The Atlantic Economy: Ireland, the US and Britain*. Manchester University Press.

O'Hearn, Denis. 2000. "Globalization, 'New Tigers,' and the End of the Developmental State? The Case of the Celtic Tiger." *Politics and Society*, vol. 28, no. 2: 67-92.

Ó Riain, Seán. 2000. "The Flexible Developmental State: Globalization, Information Technology, and the 'Celtic Tiger.'" *Politics and Society*, vol. 28, no. 2: 157-193.

Ong, Aihwa. 2006. *Neoliberalism as Exception: Mutations in Citizenship and Sovereignty*. Duke University Press.

Quigley, Mark. 2003. "Modernity's edge: Speaking silence on the Blasket Islands." *Interventions: International Journal of Postcolonial Studies*, vol. 5, no. 3: 382-406.

Riofrancos, Thea. 2019. "What Green Costs." *Logic*, vol. 9. 7 December. https://logicmag.io/nature/what-green-costs/.

Roach, John. 2022. "Microsoft datacenter batteries to support growth of renewables on the power grid." *Microsoft Innovation Stories*, 7 July. https://news.microsoft.com/innovation-stories/ireland-wind-farm-datacenter-ups/.

Robertson, Morgan, Rebecca Lave, and Martin Doyle. 2023. "Making a Market in Environmental Credits I: Streams of Value." *Environment and Planning E: Nature and Space*. https://doi.org/10.1177/25148486231151810.

Rolston, Bill. 1993. The training ground: Ireland, conquest and decolonisation. *Race & class*, 34(4), 13-24.

Rubenstein, Michael. 2010. *Public Works: Infrastructure, Irish Modernism, and the Postcolonial*. Notre Dame Press.

Ruuskanen, Esa. 2018. "Encroaching Irish bogland frontiers: science, policy and aspirations from the 1770s to the 1840s." In *Histories of Technology, Environment and Modern Britain*, edited by Jon Agar and Jacob Ward. UCL Press.

RTE Archive. 1978. 'Peaceful Protest Turns Violent'. https://www.rte.ie/archives/2018/0502/959746-ringaskiddy-residents-protest/

Scasserra, Sofia and Adriana Foronda. 2022. *Banking on Data: How the World's Tax Havens Became the Data Centres for the Digital Economy*. Transnational Institute.

Siggins, Lorna. 2016. 'Fight the Pipe: An Irish water crisis?' 23rd July https://www.irishtimes.com/news/ireland/irish-news/fight-the-pipe-an-irish-water-crisis-1.2731523 Last accessed 2nd December 2022.

Slater, E., & Flaherty, E. (2022). Marx on the Reciprocal Interconnections between the Soil and the Human Body: Ireland and Its Colonialised Metabolic Rifts. Antipode.

Slater, E., & McDonough, T. (2008). Marx on nineteenth-century colonial Ireland: analysing colonialism as a dynamic social process. Irish Historical Studies, 36(142), 153-172.

Srnicek, Nick. 2016. *Platform Capitalism*. Polity.

Taffel, Sy. 2021. Data and oil: Metaphor, materiality and metabolic rifts. *New Media and Society*. https://doi.org/10.1177/14614448211017887.

Tarr, Joel A. 1996. *The Search for the Ultimate Sink: Urban Pollution in Historical Perspective*. Akron University Press.

Taylor, George. 1998. Conserving the emerald tiger: The politics of environmental regulation in Ireland. *Environmental Politics*, 7(4), pp.53-74.

Tovey, H. (1992). Rural sociology in Ireland: a review. Irish Journal of Sociology, 2(1), 96-121.

Tovey, Hilary. 1993. "Environmentalism in Ireland: Two Versions of Development and Modernity." *International Sociology*, vol. 8, no. 4.

Velkova, Julia. 2020. "The art of guarding the Russian cloud: infrastructural labour in a Yandex data centre in Finland." *Digital Icons: Studies in Russian, Eurasian and Central European New Media*, vol. 20: 47-63.

Vonderau, Patrick. 2014. "Industry Proximity." *Media Industries*, vol. 1, no. 1. https://doi.org/10.3998/mij.15031809.0001.113.

Voskoboynik, Daniel Macmillen and Diego Andreucci. 2021. "Greening extractivism: Environmental discourses and resource governance in the 'Lithium Triangle.'" *Environment and Planning E: Nature and Space*, vol. 5, no. 2.

Wade, Robert and Geraint Ellis. 2022. "Reclaiming the Windy Commons: Landownership, Wind Rights, and the Assetization of Renewable Resources." *Energies*, vol. 15, no. 10. https://doi.org/10.3390/en15103744.

Woods, Michael. 2007. "Engaging the global countryside: globalization, hybridity and the reconstitution of rural place." *Progress in Human Geography,* vol. 31, no. 4: 485-507.

Zahara, Alex (2018). Against Risk Perception. https://discardstudies.com/2018/10/01/against-risk-perception-the-deficit-model-and-public-understandings-of-risk/ (last accessed 1st December 2022).