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Hyper-peripheral regional evolution: The "long histories" of the Pilbara and Buryatia

Tom Barratt | **Anton Klarin**

School of Business and Law, Edith Cowan University, Joondalup, Western Australia, Australia

Correspondence
Tom Barratt, School of Business and Law, Edith Cowan University, 270 Joondalup Dr, Joondalup, Western Australia, 6027, Australia.
Email: t.barratt@ecu.edu.au

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Abstract

In this article, we outline how evolutionary economic geography (EEG) explains peripheral economic development by comparing two peripheries over extended time periods. This comparison involves critically appraising EEG's capacity to account for peripheral evolution. For geographical, historical, and political reasons, peripheries lack resources that lead to path creation and renewal. The hyper-peripheral regions of the Pilbara in north-west Australia and of Buryatia in south-east Russia provide excellent comparative case studies for understanding how peripheral regional development evolves in ways contingent upon time, state institutions, natural resource endowments, and region/firm dynamics. Our analysis shows that EEG is well equipped to deal with historical factors and capitalist economies but it struggles to reconcile these regions' resilience and ability to sustain both Indigenous and non-Indigenous socio-economies. Development in these regions over extended periods of time invites questions about whether it is appropriate to apply EEG and its constituent parts: path creation, renewal, and exhaustion; regional resilience; and institutional thinness and thickness. In addressing those questions, we show that EEG can incorporate temporal development, stretching over long periods and economic analysis. We also critique the extent to which EEG can be used to consider how state activities influence path creation and renewal, the importance of extra-regional contexts, and heterodox and Indigenous perspectives.

KEYWORDS

Buryatia, Russia, evolutionary economic geography, Indigenous development, long history, periphery, Pilbara, Australia

1 | INTRODUCTION

Core-periphery relationships are significant for understanding regional development and evolution. Peripheries typically contain resource deficiencies when compared with their cores, resulting in economic development that is both sluggish and volatile (Tonts et al., 2013) and, despite sharing some characteristics, is not uniform.

Peripheral variation can provide insights into regional evolution in peripheries and more generally.

Evolutionary economic geography (EEG) is a temporal approach to economic analysis of the development of regions, considering time, opportunity spaces, and endogenous and exogenous forces (Boschma & Frenken, 2006, 2011; Grillitsch et al., 2018). Regional evolution, a manifestation of how regions utilise these opportunity spaces, results from embedded processes of path creation, exhaustion, extension, and renewal within material historical development (Boschma, 2015; Hassink et al., 2019). Contemporary regional economies are influenced by their past (Henning, 2019), inviting historical analysis stretching back in time. There are near-infinite prior iterations of regional socio-economies, each forming the preconditions for subsequent development.

In response, to explain peripheral regional evolution, we consider two peripheral regions. Specifically, we interrogate the historical and evolutionary processes that ingrain peripherality by applying the principles of EEG to two hyper-peripheral regions and, in doing so, expose some of EEG's shortcomings. Following "core-centric" perspectives, peripheries have limited capacity to generate and retain value within a region (Boschma & Frenken, 2006), meaning they are particularly vulnerable to lock-in and path dependence (Isaksen, 2015), diminishing their resilience (Martin, 2010; Webber et al., 2018). Applying EEG in this context confirms that it enables consideration of economic and temporal factors, but practitioners are less well equipped to consider socio-economic and Indigenous perspectives. On that basis, we aim to guide EEG's theoretical trajectory by examining if applying heterodox perspectives will foster a more pluralistic economic geography (Martin, 2021), build on EEG's strengths and highlight its deficiencies.

EEG engages capitalist, firm-centric economic analysis (Boschma & Frenken, 2011; Peck, 2013a) to generate a dynamic understanding of economic growth and value capture within regions. Indeed, Yeung (2021) calls for regional studies scholars to understand changing variety in firms and sectors, and new pathways and specialisations. Definition of regional success in EEG draw upon the processes, presumptions, and priorities of "core-centric" capitalist development; this is not the only measure of socio-economic success, and, for example, substantivist (Peck, 2013a) and Indigenous economic logics (*tebrakunna* country et al., 2019) can also be applied. Furthermore, the very notion of peripherality is problematic from these perspectives because these regions are not peripheral to Indigenous peoples' enduring socio-economies, an insight reinforcing the point that peripherality reflects power structures. Coupled with heterodox economic approaches, reimagining the "core" invites an expanded conceptualisation of regional development and resilience.

Key insights

Evolutionary economic geography provides a lens through which peripheral regional development can be understood, not least because peripheries evolve despite lacking many resources that correlate with positive regional outcomes. We show that deficiencies in institutional thickness and regional resources make extra-regional actors such as states and firms disproportionately important in embedding peripheral development. This inflated importance reflects and entrenches unequal power-relations between the dominant economic ideology of the core and these hyper-peripheral regions.

Here, we compare two hyper-peripheral regions, the Pilbara and Buryatia, alike in being vast, with huge expanses of unsettled land where no economic activity takes place and located thousands of kilometres from national capitals. Each region was colonised, leading to an influx of population and economic activity, but each retains little regional value adding. Their peripherality is underscored by a lack primary cities and by the presence of secondary cities and hinterlands that exacerbate economic disadvantage (Scholvin et al., 2020). Given these shared characteristics and starting points, evolutionary processes would suggest similar but not identical outcomes; however, empirically the regions retain many differences.

The contributions made are threefold. First, we advance understandings of EEG by examining peripheral regions over "long history." Second, we deepen understandings of how, in peripheries, extra-regional actors are fundamental to development. Third, by applying EEG to these hyper-peripheries, we "stress test" EEG's analytical limits, demonstrating its strong capacity to portray temporally sensitive accounts of capitalist regional development and its limitations—including incorporating presumptions about the core into peripheral regions. We examine the literature to show how and why peripherality shapes evolution. We then consider the role of time in EEG before introducing substantivist and Indigenous analytical frames. Thereafter, we place the Pilbara's and Buryatia's development in their historical, economic, and evolutionary contexts. Subsequently, we draw out key differences in both "inputs" and "outputs" that explain their evolution, demonstrating how EEG can consider both peripherality and resilience differently.

2 | PERIPHERAL EVOLUTION AND HETERODOX APPROACHES OVER "LONG TIME"

EEG is an approach, distinct from institutional and neoclassical approaches, which scholars use to consider economic geography as an evolutionary phenomenon (Boschma & Frenken, 2006). EEG examines how and to what extent forms of economic activity embed in regions and, inversely, how dependent or "locked in" regions become to their paths (Martin & Sunley, 2006). EEG has led to explanations of how—shaped by agents' choices over time—regions harness human, natural, and entrepreneurial/combinative assets within their borders (Isaksen, 2015). What constitutes an asset, however, is subjective. For instance, peripheral regions regularly have an abundance of resources including uncommoditised wilderness, whose value may lie in its *lack of* realisation of market value (Clapp et al., 2016).

At any time, regional assets can be harnessed to create income-generating activities through path *creation* and path *renewal* (Grillitsch et al., 2018; Hassink et al., 2019; Trippl et al., 2018). Explanations about these processes, however, reflect power relations and the priorities of those who set economic and policy agendas. While EEG can be used to identify regional assets, its application does not explain why resource endowments exist, revealing a methodologically salient question about when to commence analysis. We argue for "long history," dating back to pre-colonisation and the very first economic activities. Long history accounts for regional development as an adaptive and iterative process based on reactions to historical circumstances. Indeed, when considering peripheral regions whose thinness and institutional deficiencies are embedded regional characteristics, long histories have additional explanatory power. If researchers are properly to interrogate time, it is necessary to extend the scrutiny a long way. One of EEG's foundational insights is that regional development is a temporal process reflected in many measures and metaphors deployed in EEG, among them the idea that paths, growth and lock-in are inherently temporal. Henning (2019) has described how regions' economic geographies develop with relation to their histories; indeed, regional evolution is actively produced over and through time. Here, we consider economic development of regions rather than specific production processes and follow Barratt and Ellem's (2019) theorisation that global production networks and regional development are produced *over* time. EEG enables the explanatory power of "longitudinal patterns of regional economic evolution" to be revealed (Henning, 2019, p. 602).

One such pattern, regional resilience is "the capacity of a regional or local economy to withstand, recover from, and reorganize in the face [of] ... shocks to its developmental growth path" (Webber et al., 2018, p. 358). Shocks are adverse circumstances or perturbations that dislodge a system from its existing path (Martin & Sunley, 2015). Core-periphery analysis also allows for better understandings of "shocks" as we describe below, as shocks can be brought about by the policy choices of those in economic "cores," reflecting and entrenching core-periphery dynamics. There are debates about whether to measure resilience as the ability to bounce back to pre-shock paths, absorb a shock within a current structure or adapt and deal with change (Martin & Sunley, 2015; Webber et al., 2018). Either way, these definitions overlook regional contexts and the fact that peripheral regions face persistently hostile circumstances. In response, we suggest that resilience is shown in regions where socio-economies endure when facing persistent hostile circumstances and that peripheries face ongoing structural challenges, meaning the ability to endure these conditions can be considered an extension of "evolutionary resilience" (Martin & Sunley, 2015).

One way to understand regional development capacity is to consider institutional thickness which, while difficult to quantify, is dynamic and embedded in regional histories (Amin & Thrift, 1994; Zukauskaite et al., 2017). Resources are attracted to thick regions, a process which compounds iteratively, entrenching processes of peripheralisation and suggesting "long histories" are fundamental to understanding contemporary regional paths, thickness, and development.

Regional thinness—lack of thickness—and susceptibility to lock-in correlate with peripherality (Isaksen, 2015; MacKinnon, 2008; Martin & Sunley, 2006; Trippl et al., 2018). Regions' peripheral status is based on their geographical or organisational distance from "cores" (Martinus et al., 2020). Because of resource endowment or processes of peripheralisation, peripheral regions generally lack sufficient populations, knowledge, and institutions to generate institutional thickness or create paths (Isaksen & Trippl, 2017; Trippl et al., 2020). Thus, few value-adding activities become embedded, resulting in economies dominated by primary resource extraction (Isaksen, 2015), which enriches the core, a result of economic and social choices, because "resource [exploitation] is grounded in different social relations that make nature a resource" (Irarrázaval, 2020, p. 1).

Understanding the evolution of peripheral economies remains a challenge (Trippl et al., 2020). Peripheral regions strain EEG because new industrial activities rarely emerge by branching from prior paths but rather need to be constructed from the ground up (Lagendijk &

Lorentzen, 2007). However, this ground-up construction is difficult to reconcile with foundational ideas in EEG that regional preconditions shape subsequent activity (Isaksen & Trippl, 2017). The application of EEG's principles to peripheral regional development helps explain why and how economic development in peripheries is different from that in core regions and, we argue, helps clarify how peripherality and uneven development are entrenched over time.

We turn to the role of extra-regional actors in shaping evolution of peripheries. Actors shape the form of economic development in their preferred image (Jolly et al., 2020). Extra-regional actors retain disproportionate control over how regions evolve, suggesting power and politics play a role more significant than firms in shaping peripheral socio-economies. EEG's prioritisation of intra- over extra-regional links (Yeung, 2021) becomes problematic when analysing peripheries because of the disproportionate role of extra regional actors.

Extra-regional actors also reveal a scalar problem in EEG because both states and firms are categorised as extra-regional actors. They are simultaneously "headquartered" outside a region while having activities and agents embedded within it. For example, BHP is headquartered in Melbourne, Australia, but has mines and infrastructure fixed in the Pilbara. While we refer to the states and firms as extra-regional actors, we acknowledge that this nomenclature is problematic because these actors are simultaneously in and out of region.

Those using EEG adopt the assumptions embedded in capitalist economic development (Boschma & Frenken, 2006). However, socio-economic practices prevail that do not submit to universal market rationalism (Block, 2001), which leaves analytical space to challenge some presumptions in EEG and consider heterodox economic approaches to economic development (Peck, 2013b).

Indigenous perspectives on economic development incorporate varied beliefs and spirituality (*tebrakunna* country et al., 2019), including connections to the natural environment. Nature is not a resource to be commoditised but a fundamental part of individuals and society. In Australian Aboriginal and Torres Strait Islander societies, this is Country—based on deep connections to land, water, and sky and a fundamental part of life and way of life (Smyth, 1994). Similarly, in shamanistic practices and beliefs held by Indigenous Buryat peoples, land, and environment are divine and fundamental, and humans are part of nature (Boldonova, 2016).

In EEG, regional development is defined in ways not wholly compatible with perspectives that valorise Indigenous ownership and custodianship of land based on connection to that land, knowledge, and relationships (Clapp et al., 2016; *tebrakunna* country et al., 2019). Prioritising Indigenous principles has significant implications for understanding and challenging peripherality. Indigenous connections to and understandings of these regions are not based on ideas of remoteness or deficit because the land is fundamental and deified and thee regions are innately "core."

Colonised Indigenous development has involved viewing Indigenous peoples as beneficiaries of capitalist regional development (*tebrakunna* country et al., 2019). However, there is an emerging literature which considers Indigenous development as prioritising Indigenous knowledge and relations with country (Clapp et al., 2016; Pike et al., 2006; *tebrakunna* country et al., 2019). Indeed, as Irarrázaval (2020, p. 1) points out, "natural resources are not natural commodities but, rather, are socio-ecological constructions." Moreover, Indigenous worldviews exist in stark contrast to ideas about regional development in EEG, which ascribe value to expropriating commoditised resources rather than sustaining the region itself. Taking to an extreme arguments provided by Breul et al. (2021), the creation of new extractive paths in peripheries, desirable in EEG, may be deleterious from an Indigenous perspective.

Thus, peripheral economic evolution needs to be considered distinctly for three reasons. First, accounts in EEG of regional success need to deal with enduring adverse circumstances, meaning ideas about resilience needs to be recalibrated. Second, peripheral regions' thinness reveals the need for longer and deeper historical analysis more broadly to fully explain regional development. Third, peripheral status itself reflects the power and values of the core.

3 | CASE STUDIES

We adopt a qualitative, comparative case-study analysis, engaging regional comparison over extended time periods. We extend and critique EEG by selecting cases empirically distinct from prior studies so we can pursue theoretical advancement (Burawoy, 2009). Case study research is appropriate because the context of the study is integral to it. Comparing the Pilbara and Buryatia regions by considering their nature, history, location, and relationships (Stake, 2000), it is possible to draw insight and explain social phenomena (Creswell, 2013). Case study research is also appropriate for considering how endogenous and exogenous forces shape regional economic evolution (Henning, 2019; Østergaard & Park, 2015). Data are drawn from secondary material, and in accordance with the authors' institutional ethics processes, comparing the histories of each region from pre-colonial to contemporary economic arrangements.

The Pilbara and Buryatia are selected based on their distance from their cores, enduring Indigenous communities, and histories of colonisation and because their regional development is fundamentally shaped by their peripherality. Comparing them reveals insights about the evolution of peripheral regions, about why they are distinct from "cores," and about the applicability of EEG to understanding these processes.

Considering "long history" invites questions about data selection and focus. The qualitative nature of inquiry and restrictions on word length here means we have chosen to focus on moments of transition between paths (following Barratt & Ellem, 2019). We guard against both the post hoc fallacy and data inconsistencies (Henning, 2019) by charting significant changes to intra-regional economic activity (primarily path creation and exhaustion) and engaging in capitalist and heterodox explanations (Peck, 2013a, 2013b; *tebrakunna* country et al., 2019).

3.1 | The Pilbara

The contemporary Pilbara economy is dominated by resource extraction, primarily mining. The region covers 500,000 km^2, with a permanent population of 61,440, 14% of whom identify as Indigenous (Pilbara Development Commission, 2019). Iron ore mining constitutes over 70% of gross regional product, construction 12.5%, and no other industry contributes more than 3%. The resident workforce is 29,000, while 35,000 engage in long distance commuting arrangements (Department of Primary Industries and Regional Development, 2020; Pilbara Development Commission, 2019).

The Pilbara's geology, including its iron ore, was formed 3.5 billion years ago (Buick et al., 1995). Aboriginal peoples have inhabited this Country since the beginning of The Dreaming, with radio-carbon dating confirming that this extends over 50,000 years (Ward et al., 2017). Indigenous socio-economies were based around hunter-gatherer practices and fire-stick farming and seasonal movement, based on food and water availability (Wangka Maya Pilbara Aboriginal Language Centre, 2021). The contemporary region has over 31 Aboriginal cultural groups (Mulvaney, 2009; Olive, 2012; Peck, 2013a; Somerville et al., 2010).

Europeans violently colonised the Pilbara in the 1860s (Gregory & Paterson, 2015). A low-intensity sheep-farming path to service the Swan River Colony (later Perth) was created and dominated the regional economy for a century, degrading the environment to the extent that the sheep population was deliberately reduced from a peak of 1.8 million (Suijdendorp, 1980). Members of the industry used Aboriginal stockmen's knowledge and labour and systemically abused Aboriginal people (Peck, 2013a; Scrimgeour, 2014). By the 1950s, the region's extreme "thinness" was evident, with the Indigenous population estimated as 2,900 and the European population as 3,249 (Marshall, 1968).

That thinness did not prevent the creation of mining paths, but it did shape their form. Iron ore was discovered in the Pilbara in the 1860s, but transport costs, a lack of proximate coal and a subsequent export embargo to curtail Japanese expansionism then precluded path creation (Barratt & Ellem, 2019). The fact that the ore remained unexploited is significant and highlights the point that important sociopolitical and technological preconditions to path creation are created rather than "received." Mining paths were later created in the 1870s with small scale and quickly exhausted extraction, including mining by Aboriginal people (Holcombe, 2005; Mulvaney, 2013). The Pilbara's remoteness and near complete lack of infrastructure made creating new paths nearly impossible, reflecting a hyper-peripheral and limited opportunity space.

Once regulatory barriers were withdrawn by the Australian Government in 1960, four joint venture firms that were extra-regional actors imported into the region finance, people, and knowledge to create the open-cut mining path (Dufty, 1984). Ore production grew rapidly, from 0 to 18 million tons between 1967 and 1974 (Lee, 2015). The regional economy became locked into an extractive path, with much of the value generated enriching extra-regional capital and providing taxation revenue to governments seated outside the region.

The West Australian Government sought to influence regional development by setting the terms upon which minerals were exploited (Dufty, 1984). Seeking to thicken the region but by no means to make it thick, the government negotiated the construction of company towns, increasing the permanent non-Indigenous population (Horsley, 2013; Thompson, 1981). It also sought to increase value capture in the region, incentivising locating value-adding activities such as beneficiation, but this did not become an enduring element of the Pilbara's economic landscape (Dufty, 1984; McIlwraith, 1988).

Workers organised into militant unions that exploited mining capital's vulnerability to industrial unrest (Ellem, 2017; Vassiley, 2018). As regional denizens, workers captured a larger share of regional value (Dufty, 1984; Wilson, 2013). Aboriginal people were excluded from company towns and mining jobs, denying them access to the value created by mining (Ellem, 2017; Holcombe, 2005).

Decreased global demand for ore in the late 1970s and 1980s, coupled with the creation of iron ore paths on other continents, forced changes in the Pilbara's mining

networks (Wilson, 2013). This external shock threatened regional resilience and showed the extent of lock-in. In response, capital reasserted managerial prerogative, leveraging changing state employment policies (Lee, 2015). These changes reflect a neoliberalisation of the Pilbara's labour force and society (Barratt & Ellem, 2019; Ellem, 2013). Many techniques deployed to de-collectivise the workforce originated in the United States, effectively deploying extra-regional knowledge into the region (Ellem, 2015).

State policy reinforced the renewal of the extractive path along neoliberal lines (Ellem, 2017). Fly-in fly-out (FIFO) protocols were introduced, such that workers work and sleep at the site of production for an extended period, before a non-work period at "home" in other places (Storey, 2001). FIFO work protocols allow greater value to be created in a region, reducing mine construction costs and making extraction more commercially viable (Storey, 2001). The protocols are hard to explain using EEG, because workers are both intra- and extra-regional actors, making it difficult to categorise their value creation and value extraction using regional borders.

Into the 21st century, neoliberalisation in effect increased the peripherality of the Pilbara's economy and reduced the ability of those (permanently) embedded in the region to shape regional development. High ore prices led to record revenues, new mines, and increased production from 160Mt in 2001/2002 to 794Mt in 2018/2010 (Department of Industry and Resources, 2002; Department of Mines, Industry Regulation and Safety, 2019). FIFO workers residing in other regions and overseas spent their wages away from the region. Indeed, while the Pilbara's iron became valorised and the region became central to global iron and steel production networks (Barratt & Ellem, 2019), little investment was left behind, entrenching institutional thinness and peripherality. It is the nature of the valorisation that contributes to the reinforcement of regional peripherality vis-à-vis various cores (politically in Canberra, economically in China).

Little value from the mining boom was retained in the region, to the dissatisfaction of denizens (Barratt & Ellem, 2019). Meanwhile, regional lock-in was entrenched by barriers to development such as low population retention, accessibility, land availability, housing affordability, lack of technology and tech firms, and volatility in extractive market conditions (Shire of Ashburton, 2018).

The extension of the extractive path has sometimes brought Aboriginal peoples and mining companies into conflict. Under the doctrine of Native Title, traditional owners' land rights were recognised (Sutton, 1996). Indigenous organisations became financial beneficiaries of mining but "the relative economic status of Indigenous people residing adjacent to major long-life mines is similar to that of Indigenous people elsewhere in regional and remote Australia" (Taylor & Scambary, 2005, p. 1). Mining companies also sought to ensure their social licence to operate using charitable activities and Indigenous Employment targets. These relations have become controversial after Rio Tinto, in compliance with state regulation, destroyed ancient sites in the Juukan Gorge (Toscano & Hastie, 2020) and FMG, the third largest mining company in the region, legally but unsuccessfully challenged a local Land Council's ability to exercise exclusive native title over the land (Sargent, 2020). These disputes demonstrate tensions between capitalist path extension in peripheries on one hand and Indigenous understandings and priorities on the other.

3.2 | Buryatia

The Russian Federation consists of eight districts, the easternmost of which is Far Eastern District. The south westernmost federal subject of that district is the Republic of Buryatia (Buryatia), home to one of the largest Indigenous populations in Russia east of the Ural Mountains (The Republic of Buryatia, 2020b). Buryatia covers 351,300 km^2 and has a population of over 900,000 people, approximately 31% of whom are Indigenous people (The Republic of Buryatia, 2020a).

In Buryatia, industrial production accounts for 24% of gross regional product, commerce 16%, transport and communication 14%, and agriculture (mainly meat and poultry) approximately 10% (Federation Council of the Federal Assembly of the Russian Federation, 2020; Ministry of Foreign Affairs of the Russian Federation, 2018). Industrial production focuses on machine building, metal processing, power generation, non-ferrous metallurgy, food and fuel industries, forestry, wood processing, and pulp-and-paper industries, which account for over 95% of gross industrial production (FCFA, 2020), reflecting greater diversity than the Pilbara's near mono-economy. A handful of extraction companies extract coal, uranium, jade, and gold and are either subsidiaries of umbrella corporations in central Russia nor owned by state-led corporations, which again shows the difficulty of characterising firms, states, and state-owned firms as extra- or intra-regional actors. The same applies to the largest industrial producers in the region, including machine building that supports the state-owned Russian Railways, steel works, aviation industry, the defence industry, shipbuilding, and others. Most machine

building and maintenance are done for the federal government. For example, the aviation plant is a subsidiary of JSC Russian Helicopters headquartered in Moscow, which in itself is part of state-owned Rostec corporation (Vertolety Rossii, 2020). Finally, several wood processing organisations include paper and pulp production (Bazarov, 2018; Gazeta Nomer Odin, 2019; Tsybenov, 2018). Value is therefore extracted by extra-regional actors.

Buryatia is a hyper-periphery because of its institutional and geographical distance from Russia's core. Its economy accounts for less than 0.5% of Russia's GDP. The contribution to GDP is relatively smaller than the Pilbara because there are low levels of natural resource exploitation. There is also net negative migration, with 3,000 people leaving the region for better economic opportunities in the core each year (Ochirova, 2018). These trend require examination; how do we explain these regional differences using EEG?

Buryatia's industrial mix and level of value-added activity are explained by the region's history, consistent with adopting a "long history" lens. Manufacturing was introduced and supported by the Tsarist and then the Soviet central state, and this path extends into the post-Soviet era, emphasising the enduring importance of extra-regional actors in peripheral evolution, since paths created under past political regimes indeed survived these regimes.

The territory that comprises contemporary Buryatia belongs to the northernmost Mongolian ethnos (Khamag Mongol, a predecessor to the Mongol Empire) that resided around Lake Baikal, Siberia, and the Far East (Bold, 2001; Boronoyeva, 2006; Krader, 1954). Indigenous Buryat worldviews are based in *ecological traditions*, where humans are part of nature and nature is deified (Kuryshova & Kuryshov, 2019). Buryat people historically follow shamanist beliefs that are nature-centred and uphold the divinity and spiritualism of the four elements—air, fire, water, and earth (Boldonova, 2016). Thus, many forests, groves, and water locations were and still are considered sacred. For example, tree cutting was uncommon and only done with great care and necessity—Buryats used fallen trees and branches as firewood. Hunting and fishing remain subject to traditional practices (Kuryshova & Kuryshov, 2019).

Prior to colonisation, Buryats organised as nomadic and semi-nomadic pastoral tribes, the harsh climate necessitating movement to sustain livestock (Krader, 1954). Thus, the pre-colonial Buryat economy was self-sufficient and self-regulating, reliant on pastoralism, hunting and gathering, or trading Siberian furs such as sable and fox in exchange for Mongolian and Chinese silver and tea (Sablin, 2017). This description is not intended to romanticise Indigenous Buryat life—which was subject to many challenges, including harsh climate and continuous threats of invasion from hostile neighbours. Rather, it provides a counter-narrative of regional development reflecting priorities opposing the form of economic development deemed optimal by proponents of EEG.

Buryatia's colonisation began in the 17th century with the eastward movement of Russian Cossacks. Lacking state resources, Tsarist Russia did not attempt to change established ways of life for regional denizens. Nomadic and semi-nomadic socio-economic paths endured until the second wave of colonisation, when "staroobryadtsi" (Old Believers) were exiled or chose to settle in what is now Buryatia (UNESCO, 2008; Vasiljeava, 2010). Since the 1760s, Buryatia has been populated by different groups, including various tribes of Indigenous Buryats, Cossacks, runaway peasants escaping private estate owners, state peasants who were free citizens paying tax to the state to access imperial lands they tended, men of service, retired soldiers, criminals, and Old Believers, all with their own priorities for regional development (Sablin, 2017; Zhukovskaya, 1995).

State policy, specifically the Russian-Qing agreement, limited transborder movements by Buryats, extinguishing trading paths. Extra-regional domestic colonisers were granted ownership of the most desirable lands, effectively exhausting economic activity reliant on seasonal movements (Sablin, 2017). Documented land ownership was supported by the Tsarist government between 1896 and 1917, marginalising the Indigenous population, and land was seized for private transfer or state control, which could then be rented back from the state (Sablin, 2017; Zhalsanova, 2008). In contrast with the Pilbara, ethnic frictions were negligible. Rather, the creation of a sedentary farming path resulting from the import of extra-regional people, technology, and institutions led to contention because of land allocation (Boronoyeva, 2006). By 1916, most people in the region were engaged in livestock, wheat, rye, barley, oats, hemp, flax, and tobacco farming. The value created stayed in the region and fed the growing population (Kalmina, 2011).

Dominant paths endured, with centrally supported crop farming and (increasingly marginalised) animal husbandry leading to mutual discontent between sedentary farmers and nomads (Sablin, 2017). The crop-farming path endorsed by the Tsarist government was entrenched by laws supporting new forms of land use and economic activity and harnessing importation of newcomers' extra-regional knowledge to facilitate a particular form of regional development (Khaptaev, 1964, pp. 45–47).

In the 18th century, resource extraction commenced, and domestic migrants mined lead and silver

(Buraeva, 2005). By the start of the 20th century, gold mining was more valuable than all other mineral extraction combined (Sablin, 2017). Because of climate, institutional thinness, and the peripherality of the region, large extraction facilities remained uneconomic, mirroring in some ways patterns in 19th century Pilbara. Most extraction was done by denizen entrepreneurs and artisans, and almost all value generated remained in the region (Kalmina, 2011).

Transbaikalia, the region surrounding Lake Baikal, including Buryatia, is peripheral to Moscow and St Petersburg. However, Transbaikalia's location was of strategic importance to the central state, allowing control of Siberia and the Far East (including Alaska until 1867) and enabling trade with East Asian nations and the United States. To ensure control and legitimacy, the state prioritised Buryatia's modernisation (Dondokov, 2018). Built between 1891 and 1916, the Trans-Siberian Railway and accompanying telegraphic communication facilitated that process (Sablin, 2017). The railway brought increased trade and resource extraction by providing a cheap, fast, and reliable connection between the core and the periphery. Like the Pilbara, the region's economy produced raw materials with very little intra-regional value adding. Furthermore, the railway effectively thinned the region by exposing regional industries to competition from newly connected western Russia, decreasing value adding activities in Buryatia and precipitating the closure of an iron ore processing facility (Khaptaev, 1964).

The Russian Revolution in 1917 markedly changed state priorities. For Buryatia, it resulted in the formation of the Buryat-Mongolian Autonomous Soviet Socialist Republic. In the 1920s and 1930s, agriculture and industry were collectivised. From an institutionally thin periphery solely dependent on agriculture, a Soviet version of "path renewal" produced an agrarian-industrial region (Tsybenov, 2018). This form of regional development is antithetical to evolution because such processes were imposed by a powerful central state. However, by EEG's measures, the region did engage in path renewal because, in 1923, 17 enterprises employed 854 people and, by 1937, 140 large and medium-sized industrial enterprises, including glass manufacture and locomotive repair, employed approximately 17,000 workers and 1,523 engineers and technicians. Simultaneously, collectivised agriculture reduced the livestock population and closed crop farms, replacing them with large, capital-intensive collective farms. By 1937, 92% of all farming was collectivised (Tsybenov, 2018). After the Second World War, the planned economy further renewed these paths and created machine building, electric power engineering, coal, mining, forestry and woodworking, light and industrial food producing paths (Tsybenov, 2018).

In part, industrial path creation and renewal happened because of the rise of Japanese militarism (predating analogous attitudes in Australia) and strained relations between the USSR and China. These factors led the state to prioritise industrial thickening in Buryatia for geopolitical rather than economic reasons because of its strategic importance (Dondokov, 2018). Both waves of industrialisation thickened the region, a trend in contrast with neoliberal priorities in Australia, where the markets and thinness dictate the economic development of the region.

The post-Soviet transition from planned to market economics led to a creeping thinness and relative decline in regional economic performance. In 1996, industrial production was 45%, and agriculture was 46% of 1990 levels, and the number of livestock halved (Bazarov, 2018; Tsybenov, 2018). Instead, personal farming activities emerged, avoiding market economics completely (Tsybenov, 2018). Workers either left the region or engaged in small businesses in commerce (Peng, 2001). This shift evidences heterodox approaches to regional development and shows how, in peripheries, denizens' wellbeing relates strongly to state interventions (or indeed abdications).

The positive dynamics of the Russian economy and institutional developments in 2000s resulted in a considerable uplift in Buryatia's socio-economic conditions. Manufacturing endures, with vehicles and equipment remaining the largest industry (37% of the total industrial volume), followed by production and distribution of electricity, gas and water (24%), mining (18%), and food production, including drinks and tobacco (9%) (Tsybenov, 2018). However, its economic performance remains lower than that in the Pilbara and lags behind that in other Russian regions. Unable to engage in the large-scale exploitation of natural resources because of the harsh climate and the lack of capital, Buryatia still needs federal support (Dondokov, 2018).

Soviet policy towards ethnicities was aimed at internationalisation and the "friendship of nations." It had two pillars—unprecedented cultural development and the equality of peoples through de-ethnicisation and assimilation, at least at the level of rhetoric (Boronoyeva, 2006). State policy prioritised inviting Buryat people into the ideology of the core, the effects of which persist because ethnic Buryats and ethnic Russians have relatively equal socio-economic outcomes (Dondokov, 2018; Zhambalova, 2018).

As in the Pilbara, there remain tensions between capitalist and Indigenous priorities in Buryatia. Low per-capita economic activity impedes sustainable economic development as denizens engage in the destruction of nature to sustain themselves. State attempts to protect the

environment amidst limited economic development remain problematic as attempts at sustainable forest management and reductions in water, earth, and air pollution are seen to impede industrial development (Batuev & Dugarova, 2013). Although there is a push to return to traditional approaches, the lack of opportunities for regional value capture that avoid the exploitation of natural resources, as in the Pilbara, entrenches contradictions between worldviews.

4 | ANALYSIS

Comparisons of the Pilbara and Buryatia highlight inter-peripheral differences, primarily pinpointing the fact that Buryatia captures a higher proportion of value from a much smaller level of economic activity. These economic outcomes result from state development priorities, the importance of the region to the core and the role of time in development. Forms of development are contested, revealing the importance of actor power in shaping path creation, renewal, and the form of economic development.

The Pilbara's and Buryatia's economies are shaped by their distances from established cores. Both regions demonstrate resilience in that despite market, competitive, and environmental shocks, they have maintained levels of economic activity that outperform the limitations of their opportunity space. To explain those limitations in opportunity spaces, it was necessary to chart their regional development over time. The "long history" approach has revealed insights that otherwise would be subsumed as *"context"* rather than considering their formative role in the contemporary regions. While this history is not determinative of a perpetual peripherality—indeed, regions can become "core" over time[1]—the history of *these regions* helps explain why they have remained peripheral.

Absent population density, innovation, and path creators, these regions fundamentally rely on extra-regional actors and resources. However, that path creation and renewal are viewed as beneficial is subjective, because they are not necessarily beneficial to regional denizens[2] (Breul et al., 2021). While extra-regional actors import ideas, investment, and resources to facilitate path creation, regional dynamism as defined in EEG means that these actors rarely maintain full commitment to the regions. Storey's (2001) explanation of "fly-over" dynamics shows that regions can create value but actors can extract that value leaving little regional benefit.

Explanations in EEG of path creation are fundamentally attributed to capital; however, this underplays the role that states play in shaping peripheral regional development. Buryatia developed because of the influx of population, resources, investment, and knowledge facilitated by the state on the basis that the region had strategic importance to Tsarist Russia. While sustaining Indigenous Buryat ways of life, with distance, lack of transport, and limited state resources, the region remained thin and under-developed in terms of the measures used in EEG. The Soviet government had different development priorities, attempting to create a relative equality between peoples while industrialising the region through central subsidy. The era of shock therapy saw these industries exposed to the forces of the market and suffering from path exhaustion and the final transition to a centralised control government has increased reliance on natural resource extraction.

In the Pilbara, the state shaped the region differently over time, which we divide into four periods. First, the relevant government did not develop the region because of lack of resources. Subsequently, non-exploitation of ore was based on Australia's foreign policy objectives. Once the embargo was lifted, the state created policy and set the terms of resource exploitation based on a company town model. Finally, the state facilitated resource extraction using increasingly neoliberal methods, which allowed extra-regional private capital to import capital, expertise, infrastructure, and people to develop the region on its own terms.

Analysing state policy by reference to EEG's frame of "thickening" is problematic. The processes by which regions are "thickened" are not the processes of evolution but interventionist state policy. Peripheral (and, extending this analysis, all) regions have value intertwined with but separate from their economic activities. Governments colonised these regions to both control territory and lay claim to the resources therein. However, states are not always sufficiently powerful to fully enact their agendas during periods when they, themselves, are resource poor: in the 19th century in both cases and in the immediate post-Soviet period in Buryatia. Indirectly, these periods facilitated continued Indigenous socio-economies. However, both the Australia Government's desire to export ore and the military and commercial importance of Buryatia to western Russia created an impetus to develop these regions along *particular* lines.

Core-periphery relations are not merely geographical. Regional development is shaped by the economic processes examined using EEG *and* by power relations. Peripheral economic evolution is shaped by the geographical, political, economic, and social relationships with their cores, a relationship that extends beyond the analytical limits of EEG. Prior to colonisation, these regions were deemed undesirable, and states devoted few resources to their "capture." However, changing

circumstances meant that the regions became increasingly connected to global economic activity. While Buryatia became significant by connecting western Russia with East Asia and Pacific ports, the Pilbara's economic connectedness was to east Asian steel mills. State priorities have been particularly significant for economic development in peripheries and in maintaining their peripherality. The extreme variation in the very nature of the Russian/Soviet state(s), which governed Buryatia, places in stark relief the importance of the state in shaping path development and the fundamental importance of the state, and whatever form it takes, to evolution more generally.

EEG helps to explain how, in these regions, institutional thinning became ingrained, reinforcing these regions' diminished ability to retain the value the regions generated. However, EEG's narrow focus on economic value does not capture in entirety the socio-economic processes that underpin life in these regions. Both regions lack value-added economic activities, as neither region can capture value in an effective manner. While mining companies reinvest a tiny fraction of their revenues back into the region, Aboriginal Land Councils are remunerated and the state supports social infrastructure to a degree, the vast majority of the value created by mining exits the region. In Buryatia, thinness means the region is not able to generate value, relying on its strategic importance to Moscow for subsidies to sustain the local economy (Dondokov, 2018).

Our analysis provokes questions about what evolutionary analysis means for Indigenous peoples, revealing a blind spot in EEG; its forms of analysis are based on industrial and post-industrial accounts of market economics. Peripheral regional development, as measured using EEG, is associated with institutional thinness, limited connectedness to knowledge centres and reliance of extra-regional actors. These characteristics help explain why resource extraction is fundamental to peripheral economies, which also creates an inherent conflict between capitalist economic development and Indigenous worldviews. The conflict is brought into sharper focus by the fact that the landscape, of supreme value to Indigenous peoples, is "harvested" or "mined" by firms and removed from the region to create "market" value.

The form of economic activity in each region is also the result of the relative power of actors with different spatial visions. Indigenous peoples have had little say or capacity to sustain Indigenous regional development (*tebrakunna* country et al., 2019). If the creation of economic paths is a function of actors' relative agency and power, then the priorities of capitalist (and for a period Soviet) cores have dominated; they have almost wholly determined the form of regional development. The limited non-extractive economic opportunities afforded to denizens of both regions mean there are few choices available other than to engage in economic activities, creating a trade-off between dominant capitalist economics and Indigenous forms of development. These two ancient regions' economic paths are fundamentally shaped by core-periphery power dynamics, which is only partially captured by EEG. Peripheral regional development is not solely based on who creates paths, or indeed on what terms they are created, but on political, cultural and economic power struggles over the form of regional development. The results of these power struggles are fundamental to the development of the region, its prosperity (and how that prosperity is allocated) and resilience.

5 | CONCLUSION

The comparison of the empirical development of the Pilbara and Buryatia reveals insights both into the characteristics of peripheral regions and inter-periphery differences. These inter-periphery differences—where the Pilbara outperforms Buryatia by EEG's measures, despite being a thinner region—show how evolutionary approaches must be sensitive to historical antecedents over "long history." The explanatory power of long history, as we have demonstrated, also suggests this methodology can be fruitfully deployed in other fields of study and can help to expand EEG to more diverse and more distant regions.

EEG is well equipped to be used by those wanting to consider path creation, extension, and branching going further back in time. Despite extreme thinness, the significance of peripheral regions for territorial or geopolitical rather than economic reasons reveals why and, to a lesser extent, how extra-regional actors, states, and firms shape peripheral development. We agree with Yeung's (2021) critique of EEG for prioritising what happens within regions to the exclusion of broader forces and assert that the case of peripheral regions underscores this point. EEG approaches to regional economic development do not account for such factors. The forms of regional development in the Pilbara and Buryatia reflect the power advantage and priorities of the core, which embed a compounding "peripherality" where economic priorities are determined by the core, and frequently, they also deprioritise the Indigenous and denizen worldviews in which these regions are seen as innately core.

The application of EEG to such disruptive cases reveals the strengths and limitations of EEG. By engaging "long history," we show that economic evolution is shaped by ancient and then colonial histories of these

regions. Compounding or disrupting regional characteristics over time is more extreme in peripheries, as sustained thinness, limited capacity for branching and lock-in all are more likely to occur. Thus, peripheral evolution needs to be explained in reference to extra-territorial centres of power (and their own development paths) have shaped the form of development.

Peripheral regional development is shaped by power, location, and time. While location and time remain fundamental to EEG, examining two hyper-peripheries in their long histories reveals weaknesses in EEG's ability to support consideration of how and why regions change under "external shocks." The lack of power held by Indigenous and non-Indigenous regional denizens means that states which have both reflected and pursued the priorities of the core have profoundly shaped the terms on which firms develop regions. Resulting regional characteristics have endured as both regions have intensified production (with associated environmental and social degradation) and created value primarily captured by the core. Explaining regional development using both core/periphery and coloniser/colonised power structures shows that regional development reflects the *preferred spatial visions* of those who wield power. By comparing capitalist and Indigenous forms of development, we have exemplified different approaches to socio-economic activity within regions and shown how value is ascribed. Presuppositions in EEG about path creation, regional resilience, and regional thickness cannot fully account for heterodox approaches. While this lack is a strength of EEG when applied to connected regions of the core where tools for path creation and renewal are present, it creates a comparative weakness in this domain. EEG struggles to reconcile that Indigenous people have sustained their pre-colonial socioeconomies and that colonisers have found value from extracting resources from the landscape. Thus, power dynamics and structures affect how regions develop over time and they compound over long periods of time. By situating the economic development of the Pilbara and Buryatia in these contexts and inviting alternative ways to consider economic development, EEG offers an effective partial explanation of these processes. This article invites conversation in EEG about what is counted, and how, to better capture what regional development is.

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CONFLICT OF INTEREST

The authors have no conflict of interest to declare.

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ETHICS APPROVAL STATEMENT

Data are drawn from secondary material, and in accordance with the authors' institutional ethics processes, comparing the histories of each region from pre-colonial to contemporary economic arrangements.

ORCID

Tom Barratt https://orcid.org/0000-0002-2733-2123
Anton Klarin https://orcid.org/0000-0002-5597-4027

ENDNOTES

[1] For an unexpected example of this, see the example of Mauritius becoming a hub in oil and gas production (Scholvin & Breul, 2021).

[2] For a stark example of this in the Pilbara, we can consider asbestos mining near Wittenoom, a path that resulted in many workers losing their lives to mesothelioma (McCulloch, 2006).

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