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Securing conservation *Lebensraum*? The geo-, bio-, and ontopolitics of global conservation futures

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ABSTRACT

The geographical concept of *Lebensraum* ("living space") was coined most significantly by the German scholar Friedrich Ratzel towards the end of the nineteenth century. Through the lens of *Lebensraum*, Ratzel reformulated Darwin's conception of evolution as a "struggle for life" into a "struggle for space", highlighting how nonhuman species – as well as biologically conceived human 'races', nations, states, and empires – grew organically in space and colonized it. Although the concept attained considerable influence in the first half of the twentieth century, after World War II it largely fell into disrepute due to its various imperialist, colonialist, and fascist associations. Yet in some ways, contemporary academic debates concerning land and resource governance continue to implicitly or partially evoke the substance of certain *Lebensraum* conceptualizations. This is particularly so with respect to debates about global biodiversity conservation. Revisiting both Ratzelian and other *fin de siècle* theorizations of *Lebensraum,* we argue that contemporary efforts to reformulate conservation governance at the planetary scale risk amounting to a form of what we term "conservation *Lebensraum*", or a globally-significant "struggle for conservation space". Analysing the implications of conservation *Lebensraum* through a tripartite conceptual framework at the intersection of conservation biopolitics, geopolitics, and ontopolitics, we highlight how global biodiversity conservation initiatives seek to respond to multiple socio-ecological crises in the so-called Anthropocene. We end with a brief discussion of more socio-ecologically just alternatives to conservation *Lebensraum,* thereby contributing to critical conversations about the political ecology of emergent conservation futures.

1. Introduction

> "What's good is what's good for the land.
> There are fewer humans than before. The demographic peak is in the past, we are a little fewer than were before, and on a trajectory for that to continue. People speak now of an optimum number of humans; some say two billion, others four; no one really knows. It will be an experiment. All of us in balance, we the people, meaning we the living beings, in a single ecosystem which is the planet. Fewer people, more wild animals. Right now that feels like coming back from a time of illness. Like healing, like getting healthy. The structure of feeling in our time. Population dynamics in play, as always. Maybe that makes us living together in this biosphere some kind of supra-organism, who can say." (Kim Stanley Robinson 2020, 502, *The Ministry for the Future*).

In his widely celebrated book *The Ministry for the Future*, American science-fiction author Kim Stanley Robinson offers a post-Malthusian vision of a future planet in a state of radical population decline. This vision was already sketched out in an article for *The Guardian* entitled "Empty half the Earth of its humans", in which Robinson (2018) argues that it is only by reducing the human population – via a retreat to the cities and associated processes of demographic transition – that we can more effectively conserve the biosphere. To this end, Robinson explicitly endorses the work of the late biologist E.O. Wilson, a leading figure behind the "Half Earth" global conservation movement (see Wilson, 2016), and a man popularly known as "Darwin's natural heir" (Douglas, 2001).

Geographers and political ecologists are well aware that modern conservation – as well as modern environmentalism more broadly – gained great traction from their resonance with a moral panic about

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global overpopulation in the 1960s (Ehrlich, 1968, Ehrlich and Holdren, 1971, Fletcher, Breitling, and Puleo, 2014, Dean, 2015). Similarly, more recent, Wilsonian, calls to protect half the planet for nature and biodiversity conservation - well exemplified by Kim Stanley Robinson in the quote above - have been problematized as a continuation of the (neo-) Malthusian concerns of the 1960s (Büscher et al. 2017, Ojeda et al., 2019, Bluwstein et al., 2021). In understanding the deeper genealogy of these debates, however, scholars may benefit from critical engagement not only with Malthus and his legacy (e.g. Dean, 2015, Kallis, 2019), but also with how a variety of influential thinkers have sought to *spatialize* a range of Malthusian themes from the late nineteenth century onward. Indeed, by examining the reception and reformulation of certain Malthusian concerns in early human geography and biogeography, one is perhaps even better placed to trace the evolution of these ideas within and through contemporary debates about conservation governance.

To this end, this article revisits the writings of German geographer Friedrich Ratzel to reconstruct the genealogy of the concept of *Lebensraum*.[1] Through the lens of *Lebensraum*, Ratzel reformulated Darwin's conception of evolution as a "struggle for life" into a "struggle for space", highlighting how nonhuman species – as well as biologically conceived human "races", nations, states, and empires – grew organically in space and colonized it. Although an important literature at the intersection of historical geography and intellectual history continues to examine the resonance and context of Ratzel's theorizations, as well as those of his interlocutors and disciples (e.g. Chiantera-Stutte 2008, Elden, 2010, Klinke and Bassin, 2018), in this paper we extend these inquiries by highlighting how *Lebensraum*-related imaginaries may continue to implicitly shape contemporary debates about global biodiversity conservation and its emergent future(s).

Significantly, Ratzel coined the geographical concept of *Lebensraum* towards the end of the nineteenth century. In this "Darwinian moment" (Levine, 2010, 1) of *fin de siècle* academic discourse in Europe, diverse theories of evolution sought to offer the "strongest conceptual foundations" for a broad range of newly emerging scientific disciplines, including biology, anthropology, and geography (Cresswell, 2013, 42). Each of these disciplines developed as distinct offshoots from the broad field of study that had formerly been institutionalized as "natural history", encompassing the work of both proto-biologists like Charles Darwin and proto-anthropologists like James Cowles Prichard (e.g. Rainger, 1980). By the early twentieth century, however, epistemological distinctions both within and amongst these nascent disciplines were beginning to crystallize. In the case of geography, this led to the formation of three sub-disciplines still known today as political geography, human geography (or anthropo-geography) and biogeography. In Germany, Ratzel himself played an important role in delimiting these areas of geographical specialization, particularly via his works *Anthropogeographie* (published in two volumes, 1882 and 1891), *Politische Geographie* (first published in 1897), and his classic essay on *Lebensraum*, famously subtitled "a biogeographical study" (published in 1901).

Despite these emergent distinctions, and the language of evolution that was common across them, each of these sub-disciplines remained somewhat preoccupied with a series of Malthusian themes or *motifs*. These themes included recurring questions of demography and (over) population relative to the natural resources available to both humans and other species within a given space or territory (Dean, 2015). Importantly, these spaces included the newly-colonized territories that were still being incorporated into the expanding European empires of the late 19th and early 20th centuries, and particularly so in the aftermath of the Berlin Conference of 1884–5 (Abrahamsson, 2013). In the post-WWI Weimar Republic, for instance, this conjuncture was notably characterised by "a feeling of existential threat", expressed in the ideology of "*Volk ohne Raum* [people without space]" who were therefore ostensibly in need of *Lebensraum* (Jureit, 2019). As Albrecht Penck put it in his book *Nationale Erdkunde* ("National Geography", published 1934), at this juncture the role of an academic geographer was to "learn the entirety of both earth and humanity, both effectual powers and dormant powers, and about the war between humans on earth for both food and space" (Penck 1934, 27, cited in Zimmerer 2016, 83). In this regard, Ratzel's contribution represents a prominent example of how a certain type of *fin de siècle* academic geography increasingly sought to mobilize both Malthusian and Darwinian thought in advancing an incipient spatial science.

Against the background of recurring Malthusian and Darwinian concerns, Mark Bassin emphasizes that Ratzel's original theorization of *Lebensraum* must be understood in the political and historical context of late European imperialism and colonialism (Bassin 1987a, 474, Bassin 2003). So too, we argue, must we situate the evolving resonances of *Lebensraum* imaginaries implicit in contemporary global conservation debates in relation to resurgent (neo-)Malthusian anxieties about the implications of purported overpopulation, in what is commonly referred to as the "Great Acceleration" or "Anthropocene" (Steffen et al. 2015, Rockström et al. 2009).[2] Crucially, this is not to say that contemporary proponents of expansionary biodiversity conservation necessarily reproduce the exact substance of Ratzelian or other late nineteenth century theorizations of *Lebensraum* verbatim. Rather, as Patricia Chiantera-Stutte puts it, certain "features" or "structures" that characterized the theorizations of Ratzel and his interlocutors have recurred throughout multiple historical–geographical conjunctures, having been "revised and redeployed in different millieus, methodological fields and historical times" (Chiantera-Stutte 2008, 188, Chiantera-Stutte, 2023, 37). Adopting a genealogical perspective on the evolution of related discourses, we thus revisit the classical (Ratzelian) concept of *Lebensraum* to illustrate how it currently threatens to resurface in novel form via the reconstitution of conservation governance at the planetary scale, and in ways that risk amounting to what we term *conservation Lebensraum*, or a global "struggle for conservation space".

In advancing this argument, we seek to contribute to this special collection of *Geoforum* on "Political Ecologies of the Future", as well as to existing critical scholarship on the biopolitics and geopolitics of conservation (Cavanagh, 2018, Fletcher et al., 2018, Hodgetts et al., 2019, Massé and Margulies, 2020, Ramutsindela et al., 2020, Bluwstein, 2018). As Jørgensen (2022) points out, conservation politics has always been essentially future-oriented in its preoccupation with preventing the potential extinction of nonhuman species through intervention in the present. In its emphasis on the importance of establishing (nonhuman) living space as the basis for such pre-emptive intervention, conservation *Lebensraum* thinking epitomizes this perspective wherein – in anticipation of the imminent sixth extinction crisis to which conservation must respond (Wilson 2016, Ceballos et al., 2017) – "today we increasingly experience time coming toward us, from the future to the present" (Braun 2015, 239). A critical engagement with incipient logic(s) of

[1] The concept of *Lebensraum* has been largely disavowed or abandoned in geographical scholarship after the Second World War – not least due to its malign uptake in various colonial and fascist policies during the twentieth century (Abrahamsson, 2013). To some – if not most – geographers, Ratzel himself is likewise a "disgraced figure" (Klinke and Bassin, 2018), while others have sought to rehabilitate at least parts of his thought (Natter, 2005, Rose, 2021). The understandable rejection of an at times openly national-chauvinistic approach to geographical theory has increasingly also led to vibrant critical engagements with the geographies, epistemologies, and politics of *Lebensraum* imaginaries themselves. With this article we seek to contribute to these debates.

[2] While using the term Anthropocene throughout this article, our intention is not to uncritically endorse the deeply problematic and depoliticizing narrative of an undifferentiated "humanity" being responsible for the climate crisis (Malm and Hornborg 2014, Moore 2017, Yusoff 2018). Nor is it to detract from important ongoing debates concerning alternative terms, such as the Capitalocene, Plantationcene, and so forth. We adopt the term 'Anthropocene' simply for practical reasons, as it continues to be a more widely recognized signifier.

conservation *Lebensraum* thus helps us to understand not only how the future is instrumentalized in arguing for the present need to appropriate lands and resources in the interest of (non)human survival, but also how the contemporary demarcation of conservation space implicitly seeks to proactively *secure* future territories for the protection of nonhuman life.

Here, Ratzel's work offers an especially productive lens for deepening and historicizing our understanding of the relations between not only biopolitics and geopolitics, but also what Brian Massumi (2015) terms "ontopolitics" or ontopower: a pre-emptive "environmental power" that "alters the life environment's conditions of emergence" (p. 40) such that contemporary and anticipated future threats to certain forms of life are eliminated. Given that the exact spatial extent of future environments under threat is difficult – if not impossible – to quantify precisely, Massumi speaks not of "territory" *per se*, but rather of a "prototerritory" which necessarily becomes subject to ontopolitical interventions. In this sense, ontopower can be productively understood in both comparison and contrast with Foucault's (2003, 247) concepts of sovereign power – concerned with "taking life or letting live" – and biopower, oriented toward "making live or letting die" at the level of the population. Extending Massumi's analysis to contemporary biodiversity conservation, Büscher (2018) thus observes, importantly, that "[o]ntopower in conservation focuses on the question of how to prevent nature's destruction in the future through pre-emptive measures in the present" (p. 157–158). Seeking to further this latter strand of inquiry, in what follows we adopt a tripartite framework at the intersection of biopolitics, geopolitics, and ontopolitics to examine how conservation *Lebensraum* appears to have been (re)constituted over time – variously – as an object of biopolitical government, a crux of geopolitical expansion, and a locus of "prototerritorial" securitization.

In developing this argument, the article proceeds as follows. First, we review recent debates on geopolitics, biopolitics, and ontopolitics in political ecology, illuminating how a focus on conservation governance can advance these debates in the context of global environmental change in the so-called Anthropocene. Second, we revisit Ratzel's (2018 [1901]) essay "*Lebensraum*" and its reception in the first half of the twentieth century, highlighting the implicitly – or perhaps prototypically – biopolitical, geopolitical, and ontopolitical implications of Razel's thought. Third, we illuminate how not only the biopolitical and geopolitical – but also the ontopolitical – aspects of *Lebensraum* thinking threaten to (re)emerge within contemporary debates about global environmental change, most prominently with regard to narratives foregrounding human population decline as a means of bolstering "Half Earth" efforts to conserve biodiversity. We conclude by reflecting upon how rethinking (or perhaps even decolonizing) nature-society relations in the ostensible "Anthropocene" may be akin to overcoming the bio-, geo-, and ontopolitics of conservation *Lebensraum*.

2. Between territory and prototerritory: situating conservation *Lebensraum*

Recent scholarship in geography and political ecology has sought to extend Michel Foucault's theorizations of governmentality and biopolitics by examining how both human and nonhuman populations have become an object of eco-governmental and biopolitical management (Rutherford and Rutherford, 2013, Cavanagh, 2014, Valdivia, 2015, Dean, 2015, Cavanagh, 2018). This is particularly so in relation to histories and practices of conservation governance (Agrawal, 2005, Fletcher, 2010, Biermann and Mansfield, 2014, Cavanagh and Benjaminsen, 2015, Bluwstein, 2018). In Foucault's own conceptualization of biopolitics, the imperative of protecting and facilitating the flourishing of favoured populations – "making live" as opposed to "letting die" – is bound up with interventions into the biological or environmental factors that shape the wellbeing of specific human populations (Foucault, 2003, Foucault, 2007). As Foucault (2003, 60) put it at the outset of his *Society Must be Defended* lectures at the Collège de France – echoing Darwin himself – his point of departure for these inquiries was the "recasting of the theme of racial confrontations in terms of the theory of evolutionism and the struggle for existence" in European social thought throughout the eighteenth and nineteenth centuries. Importantly, this "biological transcription" (Foucault 2003, 60) of both external and ostensibly "internal" threats to European societies arose in the context of late European imperialism, as well as the forms of "internal colonialism" that marked processes of (nation-)state formation within Europe itself. For Foucault, such biological transcriptions led, in turn, to a broader process of "[w]estern man […] gradually learning what it meant to be a living species in a living world", wherein "life and its mechanisms" were brought more centrally into "the realm of explicit [governmental] calculations" (Foucault 1978, 142-143).

What has received less attention thus far, however, is how space itself – or in a Ratzelian framework, *Lebensraum* – has figured in different "varieties" of governmentality (Fletcher 2017, 313), and how the relationship between populations and land or territory is conceptualized and managed through a biopolitical lens. As Klinke and Bassin (2018, 54) note, it is "the primacy of life within his political theory that links Ratzel to a range of ongoing theoretical debates on the nature and emergence of modern biopolitics – the politics of life – even though this connection has not yet been significantly explored". Indeed, several geographers and historians have produced incisive examinations of the literal "geographies of *Lebensraum*" and their biopolitical implications, understood as the impacts of historical initiatives to implement *Lebensraum*-inspired policies within, for example, the context of German settler-colonialism in Southwest Africa, or throughout WWII within the so-called Third Reich (Minca and Rowan, 2015, Driessen and Lorimer, 2016, Giaccaria and Minca, 2016, Madley, 2005). Only rarely, however, have the biopolitical implications of these policies been traced to Ratzel's original writings. Yet as Chiantera-Stutte (2018, 91) rightfully argues, Ratzel's *Lebensraum* essay "can itself be read as a biopolitical text", one which inspired governmental *policies* with perceptible biopolitical implications (Minca and Rowan, 2015, Giaccaria and Minca, 2016).

In pursuit of such deeper engagement between Ratzel's work and contemporary academic literatures, we reconsider, through the lens of conservation *Lebensraum*, the implicit relations between biopolitics, geopolitics, and ontopolitics in Ratzel's thought. Before turning to Ratzel, however, we first must briefly revisit the work of Michel Foucault to highlight where exactly the difference lies between the *bio* and the *onto* in contemporary forms of politics. Firstly, it is notable that Foucault's (2008) *Birth of Biopolitics* lectures at the Collège de France mark a partial break with – or perhaps an extension of – his earlier conception(s) of disciplinary power as oriented toward the *normalization* of both individual and collective behaviour. In *Discipline and Punish*, for instance, Foucault (1975) was concerned with the rise of forms of power that sought to harness various types of pervasive self-surveillance. Later, Foucault extended his analysis of disciplinary institutional arrangements and their focus on the "anatamo-politics" of controlling individual bodies with broader measures intended to foster the "biopolitical" management of entire populations (Foucault, 1978). In the lectures on specifically liberal or neoliberal governmentality in the *Birth of Biopolitics*, however, Foucault's earlier focus on *normalization* is complemented with an "environmental" view of governmentality as necessarily being concerned with the *persistence* or even *resilience* of certain institutional functions in the face of omnipresent shocks, risks, hazards, and crises. Yet even here, Dean (2015, 20) – for instance – argues that Foucault overlooked how an ostensibly "confined space" or discrete territory is a central, Malthusian *motif* within the liberal government of life.

In relation to this issue of territorial governance, Massumi (2009, 155) intervenes, asking in response to these increasingly "environmental" conceptions of a governmentality that seeks to manage a state of

permanent crisis as the new normal: "Is this still 'biopolitics"? Answering his own question in the negative, Massumi (2009, 168) instead proposes the concept of *ontopower,* understood as an "environmental power that returns to life's unliveable conditions of emergence in order to bring it back". Unlike biopower, the exercise of ontopower is oriented not toward the optimization of known populations in a given territory *per se.* Rather, the goal of ontopolitics is to secure what Massumi calls a "prototerritory" – that is – a "nonstandard environment, characterized by an ever-presence of indiscriminate threat, riddled with the anywhere–anytime potential for the proliferation of the abnormal" (Massumi, 2009, 157). Ontopolitics, in short, is about "pre-empting incipient tendencies towards unknown but certain future threats to life" (Büscher, 2018, 158).

Here, we follow Büscher's (2018) reading of Massumi, suggesting that the governance of prototerritories exceeds conventional biopolitical calculations of how given populations should be administered within discrete territories (i.e. in accordance with a spatially-specific doctrine for influencing which populations should be "made to live" as opposed to "let die" within a given territory). Specifically, this is because the object of "ontopolitical" government shifts from managing the known present to anticipating and attempting to secure a specific, ostensibly "desirable" version of the unknown future. In this sense, it is notable that one of Massumi's key empirical examples of ontopolitics is the neoconservative "Project for a New American Century" (Massumi, 2009, 168), which reached its apotheosis throughout the American-led wars in Afghanistan and Iraq (e.g. Gregory, 2004). For Massumi, this example illustrates the efforts of the "George W. Bush administration to realign US foreign policy on full-spectrum preemptive power" (ibid). From an ontopolitical vantage point, initiatives like the Project for a New American Century aim to secure the future of a *specific* geopolitical constellation – in this case, the post-Cold War order marked by largely unrivalled American imperialism and hegemony – by way of pre-emptively mitigating anticipated threats to it. In this sense, the exercise of ontopower cannot be reduced to the conventionally "biopolitical" management of populations as such. Though deeply entangled with related forms of sovereign power, disciplinary power, and biopower, we suggest that ontopower illuminates a *complementary* dimension of contemporary governmentality insofar as it is concerned with the anticipation of emergent but largely unknown threats to purportedly "desirable" – yet nonetheless contested – futures.

Ontopower's concern with the prototerritorial conditions for specific kinds of *emergent* threats thus makes it particularly relevant for unpacking the political–ecological implications of future-oriented conservation governance in the context of socio-ecological crises in the so-called Anthropocene; or as Massumi puts it, in a "crisis-prone environment" where "threat is endemic, uncertainty is everywhere" (Massumi, 2009, 158). Extending Massumi's preoccupation with the seemingly permanent "War on Terror" to the field of conservation, conservation ontopolitics is exemplified by growing tendencies toward militarization and securitization in environmental management (Lunstrum, 2014), as manifested – for example – via an ostensible "War for Biodiversity" (Duffy, 2014, 2016). In other words, conservation ontopolitics similarly evinces a preoccupation with pre-empting threats to a particular – largely Western dominated and liberal – *version* of "future natures" to be conserved via protected areas and related institutions. In this sense, efforts to secure a viable conservation *Lebensraum* risk conceiving of future nature(s) as largely being engrossed in a permanent, Ratzelian "struggle for conservation space" against humans, whose alleged state of overpopulation becomes a permanent conservation threat that demands mitigation.

Before addressing the contemporary biopolitics, geopolitics, and ontopolitics of resurgent conservation ambitions, however, we are compelled to excavate a deeper genealogy of these initiatives, which we suggest is traceable to the *fin de siècle* theorizations of Friedrich Ratzel and his interlocutors. Through a close reading of Ratzel's own work on *Lebensraum*, we caution against drawing a somewhat too-rigid distinction between biopower and ontopower, or suggesting – categorically – that the rise of global conservation governance at the planetary scale signals a transition from an era of biopolitical management to one of ostensibly ontopolitical governance. As our conceptualisation of conservation *Lebensraum* suggests below, perspectives rooted in biopolitics, geopolitics, and ontopolitics may ultimately be mutually complementary in explaining or analysing the political ecology of emergent conservation futures.

3. Biopolitics, geopolitics, and ontopolitics in Ratzel's *Lebensraum*

In tandem with evolving literatures on the histories and geographies of actually-existing *Lebensraum*-inspired policies (Minca and Rowan, 2015, Giaccaria and Minca, 2016), a small but important debate has emerged in critical scholarship examining what we might call "*Lebensraum* geographies". This literature examines the often-subtle diffusion – and at times explicit embrace – of *Lebensraum* thinking in historical and contemporary academic scholarship. Intersecting with the posthumanist and vitalist turn across several disciplines, an important strand of this literature reflects the "remarkable congruence between Ratzel's ideas and contemporary more-than-human geography" (Klinke, 2019, 1, Barua, 2018, Abrahamsson, 2013). Indeed, at times, Ratzel could easily be read as a kind of crypto-posthumanist, new materialist, or more-than-human geographer (Klinke, 2019). In his *Lebensraum* essay, for instance, differences between life and earth, and distinctions across species – both human and nonhuman – are either flattened to a significant extent, or entirely collapsed.

Klinke (2019, 7), however, cautions against certain "vitalist temptations" that invite post-humanist geographers to follow in Ratzel's footsteps by (re)enchanting prevailing conceptions of 'life itself' as a creative force. To Klinke (2019, 8), the risk of such vitalist temptations lies in reproducing a Ratzelian "dark materialism": a fascination for a world of fossils and human ruins, where nonhuman life is celebrated after human life is gone. Earlier critiques, too (e.g. Stoddart, 1966, 692), have questioned vitalism's "dubious value" in explaining complex social and spatial phenomena. Against such critiques, or perhaps ignoring them, Ratzel's vitalist tendencies have also recently prompted more favourable (re)appraisals by some geographers (Barua, 2018, Usher, 2020, Rose, 2021).

Certainly, both a close reading of Ratzel's *Lebensraum* essay and a careful understanding of the *Zeitgeist* in which it was produced are essential. Importantly, Ratzel was not the first to introduce the concept of *Lebensraum*. German discourses of overpopulation and population expansion preceded the publication of Darwin's *Origin of Species* in 1859, and can be traced at least to the work of economist Friedrich List in the 1840s, although he did not use the term *Lebensraum* himself (Bassin, 1987b, Halas, 2014). It was likely early ethnologist Oscar Peschel who introduced the term by the 1870s "to denote the specific natural region in which a particular people had emerged and developed" (Klinke and Bassin, 2018, 55). Peschel and others had argued, in somewhat Lamarckian fashion, that "there was a clear causal connection between land and people, in the sense that the latter 'adapted' to the conditions of their local habitat" (ibid). Following the publication of *Origin of Species*, Ratzel's mentor Moritz Wagner notably also intervened in these debates, deriving a prominent conception of *Lebensraum* that emphasized species *migration* as a process leading to improvement and perfection, unlike Darwin who insisted on species *variability* as a process leading to environmental adaptation (Halas 2014, Jureit, 2018). These two understandings of evolutionary theory fed into Ratzel's concept of *Lebensraum*, which highlights the struggle for space as an outcome of organic growth, expansion and colonization (Jureit, 2018). In this sense,

Ratzel's work can be read as contributing to broader discourses of social Darwinism, although his writings are generally not characterized by the more overt eugenicist and racist outlook of some of his contemporaries (Bassin, 1987a, b).[3]

In his 1901 text "*Lebensraum*: a biogeographical essay", Ratzel draws on natural history, zoology, botany, geology, ethnology, and related fields to develop a general biogeographic perspective for studying the distribution of life on Earth (Barua, 2018). Importantly, as translator Tul'si Bhambry (Ratzel, 2018 [1901], 59) points out, it is life (*Leben*) that stands out as a central keyword throughout the essay. Acting as a common glue, as it were, the idea of life holds together related concepts of living space (*Lebensraum*), life force (*Lebenskraft*), viability (*Lebensfähigkeit*), life abundance (*Lebensreichtum*), and life foundations (*Lebensgrundlage*). For some, these inclinations present interesting possibilities for (re)reading Ratzel as a precocious – if nonetheless problematic – contributor to early forms of more-than-human thought (e.g. Usher, 2020). In short, we remain sceptical of attempts to rehabilitate or revalorize Ratzel as an early "more-than-human" thinker. Yet, rather than endorsing either the outright disavowal or the attempted rehabilitation of Ratzel's writings, we highlight generative possibilities arising from *critical* engagement with Ratzel's *oeuvre* via a tripartite framework grounded at the intersection of biopolitics, geopolitics, and ontopolitics.

3.1. Biopolitics

The biopolitical dimensions of Ratzel's thought stem from his critical engagement with Darwin's work on the evolution of species (see also Chiantera-Stutte, 2018). Darwin's conception of evolution entailed an implicitly biopolitical "struggle for life", one in which – as he once put it – each "new variety or species when formed will generally take the place of, and so exterminate its less well-fitted parent", with "the flourishing twigs destroying the less vigorous" (Darwin, 1896, 481). These aspects of Darwin's evolutionary thought were widely adapted by geographers throughout this period across Europe, Russia, and various European (settler) colonies to explain the growth of peoples, nations, and states through recourse to narrow organicist analogies from the plant and animal world (Stoddart, 1966).[4]

Though largely convinced of Darwin's conception of evolution as a "struggle for life", Ratzel was nonetheless dissatisfied with Darwin's apparent failure to explicitly consider the importance of *space* within his analysis, unlike Malthus to whom space was central (also see Dean, 2015). As Ratzel put it:

> "Darwin, in the famous third chapter of his Origin of Species, takes for granted Malthus's views on the relationship between the multiplication of living organisms and their living space. He expects that although humans are creatures that reproduce slowly, in less than a thousand years of unrestrained reproduction they would fill the earth in such a way as to leave no space for more. His argument left no doubt that the human struggle for life would largely have to be a struggle for space. And yet, remarkably, neither he nor his successors have studied this aspect of the question in detail" (Ratzel, 2018 [1901], 72).

But what, exactly, governs this spatial biopolitics of life and death? For Ratzel, it was organic growth that underpinned life, leading both to differentiations across forms of life, and eventually, to spatial expansion. "A people does not remain attached to the same soil for generations", he wrote: "it must spread, because it grows […] the people's space grows with the time that is necessary to effect its transition into a new variety or race" (Ratzel, 2018 [1901], 77). Biopolitically, Ratzel thus conceptualized nation-states (*Staaten*) as organisms with populations (nations – *Völker*, and races – *Rassen*) who had their distinct, knowable – and thus manageable – *Lebensraum* requirements, which were governed by natural laws.

Not only in his *Lebensraum* essay, but also in his *Political Geography*, Ratzel implicitly understood the state as a biopolitical entity *par excellence*. It was not the people alone, but the connection between people and soil (and hence land and territory) which imbued the state with vitality. "[T]he state is not only an organism because it is a connection between the living people and the immobile soil," he wrote, "but also because this connection is consolidated to the extent that the two merge and can no longer be thought separately without life taking flight'" (Ratzel, 1923, 4, cited in Jureit, 2018, 82).

3.2. Geopolitics

Ratzel's fascination with organic growth, movement, migration and expansion led him to comment not only on the development of nations and states, but also on colonialism and imperialism. Towards the middle of the *Lebensraum* essay, for instance, Ratzel shifts from discussing exclusively nonhuman aspects of biogeography to focusing on humans. Beginning with the question of nonhuman migration, he maintains that "*a people, a race, a species can only migrate by colonizing*. Thus, what we call migration is in fact *the growth of a living area [Lebensgebiet]* beyond its old space" (Ratzel, 2018 [1901], 66, emphasis in original). For Ratzel, when "a people, a race, a species" grows, its spatial needs change. "For humans", these varied requirements for space highlight "the great significance of living space *[Lebensraum]*", which varies from "people" to "people", "race" to "race" (Ratzel, 2018 [1901], 71). As he put it:

> "A small Indian tribe in the South American virgin forest has needs and expectations regarding space that are very different from those of a European for whom the well-being of his people can only lie in grasping the whole world [*Weltumfassung*]. Every living organism claims a different living space, and all organisms belonging to the same species will pose the same claim" (Ratzel, 2018 [1901], 71).

To Ratzel, this Darwinian struggle for living space could not be separated from a Malthusian concern for food production or acquisition. That this is not simply a biogeographical claim about nonhuman life is obvious when Ratzel reminds the reader that "[i]n the struggle for life space has a similar significance as those decisive climaxes in the struggle of nations [*Völkerkampf*] that we call battles." For humans and nonhumans alike, "what is at stake is the acquisition of space" (Ratzel, 2018 [1901], 72).

Accordingly, *Lebensraum* thinking seemingly offered an opportunity to escape the Malthusian population trap through expansion and colonisation. That is to say, colonialism in search of *Lebensraum* would (re) vitalize certain nations or states and secure their survival, avoiding the twin problems of insufficient food and resources for growing European populations in the process (Abrahamsson, 2013, Bassin, 1987a). Drawing on Ratzel's work, the Swedish political scientist – and first scholar to coin the term 'geopolitics' – Rudolf Kjellén would later take the primacy

[3] Such as Herbert Spencer who coined the famous term "survival of the fittest", and Ernest Häckel, the German biologist who coined the term "ecology", both in the 1860s. Inspired by Darwin's *Origin of Species*, Häckel wrote in his 1868 *Natürliche Schöpfungsgeschichte* how ostensibly "inferior" races "would succumb to the struggle for existence". Equally as a response to Darwin, and having audited Häkel's lectures in Jena, Ratzel began publishing around the same time as Häckel, in 1869 (*Sein und Werden*) (Jureit, 2018). However Ratzel's most widely known ideas about *Lebensraum* did not crystalize until the 1880s, in response to the (by then) widespread popularity of social Darwinist and eugenicist thought (Weikart, 2003). Ratzel followed Häckel to develop his monist, organismic view of human society, which would become central to his work on *Lebensraum* (Bassin, 1987a).

[4] See, for instance, Bassin (2003), Livingstone (2011, 374ff) and Kearns (2011, 613ff) on how European academic discourses circulated to and throughout North America and Russia in this period. America's leading social Darwinist geographer at the time, Ellen Churchill Semple, was a close student of Ratzel. Likewise, Frederick Jackson Turner drew on Ratzel to develop his views on the importance of space in the development of the American settler nation (Bassin, 1987a).

of land a step further, insisting that land was more important than population for the nation-state. If needed, Kjellén argued, the state would let its people die, but it would do everything to ensure the integrity of its land, its *raison d'état* as it were (see Abrahamsson 2013). Coincidently, Kjellén – a "glowing Ratzelian" according to Klinke (2019) – was also the first to coin the concept of biopolitics to highlight "life struggles for existence and growth" between different groups (Lemke, 2011, 9ff).

In this regard, Ratzel prefigured the emergence of a related body of scholarship not only on securing *Lebensraum* ("living space") *per se,* but also on the relations between *Lebensraum* and *Grossraum* ("great(er) space"). Having been directly influenced by Ratzel (Specter, 2017), Carl Schmitt adopted the notion of *Grossraum* in the interwar period and popularized it through his famous *Nomos of the Earth* (published in 1950).[5] He credited Ratzel as someone who "recognized that coming to terms with space is the defining trait of all life" (Schmitt, 2007, 122, cited in Chiantera-Stutte, 2023, 36). Schmitt conceived *Grossraum* as a "geopolitical space", or a "global region" of influence, where borders, sovereignty, and identity are shaped by a hegemonic *Reich* (Specter, 2017, 399, Elden, 2010). These mutually exclusive, geopolitical spheres of influence off-limits to external powers ("*raumfremde Mächte*", see Elden, 2010, 19) could even encompass an entire continent under the leadership of a powerful country, such as Germany in *Mitteleuropa*, or the United States through its Monroe Doctrine in the Americas (Barnes and Minca, 2013, 676, Chiantera-Stutte, 2008, Schmitt, 2003).

For Ratzel already, there was ostensibly no scientifically justifiable rationale for smaller political territories (such as the Eastern European states) to exist. On the contrary, the evolution of cultures – understood as a Darwinian struggle for *Lebensraum* – was underpinned by and necessitated territorial expansion. To use a biological metaphor, thinking geopolitically with Ratzel's *Lebensraum* is thus akin to seeing the world as a petri-dish of growing cell cultures: the inevitable organic growth of states will lead to the colonization of the whole world by nation-states with imperial ambitions. The Darwinian struggle for survival, understood as Ratzel's struggle for space, would gradually result in a new political reconfiguration in which the "old" states were decomposed into a series of new spheres of influence (*Grossräume*).

3.3. Ontopolitics

A third important aspect of the *Lebensraum* essay concerns the cryptically or proto-typically *ontopolitical* dimensions of Ratzel's thought. In the first instance, Ratzel formulates an ontologically monist, organic conception of the relationship between species and space, in which life and death, space and time, all exist in a state of fundamental unity. In essence, a monist theory of all life (spearheaded by biologist Ernst Häckel) led Ratzel to explain human development as an effect of the natural world (Klinke, 2019, Kalikow, 1983). Rather than conceiving of the environment as a factor that mechanistically determines life itself, however – and thus one that can simply be biopolitically managed through a set of governmental interventions – Ratzel construes life as a "creative, omnidirectional and insatiable force […] in continual motion" (Klinke, 2019, 4). This fascination with life itself as an inherently "vital" force driving both humans and nonhumans recurs throughout Ratzel's thought.

Yet beyond his monist ontology, it is Ratzel's subtly normative stance that ultimately reveals a hierarchical conception of life in his implicit onto-*politics*:

> "Clearly, the limitation of living space on earth demands that an old species vacate the space that a new one needs to develop. In this sense, new creation and progress presuppose retreat and demise. […] Thus one might think the old species only retreats because it is deprived of space. The history of the extinction of primitive peoples that accompanied the advance of civilized ones provides plenty of evidence" (Ratzel, 2018 [1901], 74).

Simply put, for Ratzel, it is the life force (*Lebenskraft*) of a specific species, population, or "race" that drives it to expand outward in space and colonize it. Through this process, the expanding population (re) shapes the landscape to its own benefit over time, as well as to the likely detriment of its competitors. As Ratzel (ibid) notes in relation to the "history of the extinction of primitive peoples", moreover, the nature of this process is temporally open-ended, insofar as expansionary populations seek to secure the preconditions for a prosperous future *for themselves*, and often at the expense of displaced "others". The following passage, in a section notably entitled "wide space preserves life", further underscores the bio- and ontopolitical nature of this process:

> "Thus in in many cases the development of new organisms hinges on successive spatial retraction and expansion. In many cases new varieties and species require narrow spaces in order to set themselves apart; having acquired their new characteristics, they must establish their capacity to resist cross-breeding and climatic influences across a wide area […] this shutting off, however, can only be achieved through rapid expansion, unless nature already provides the barriers, such as in the case of islands" (Ratzel, 2018 [1901]: 77).

In this regard, Ratzel is interested in processes that are in some ways not unlike what contemporary ontopolitical theorists would describe as the securitization of *prototerritory* rather than territory *per se*. That is to say, Ratzel's fascination with questions of conquest, migration and colonization is integrally related to his interest in the factors that seem to facilitate the protection of certain *varieties* of life – whether construed as species, populations, nations, or empires – and their capacity to persist in the face of recurring risks, competitors, or other threats. The biopolitics of this perspective is evident insofar as these processes were thought to favour particularly "vigorous" species, populations, or – indeed – states and empires at the expense of ostensibly "less vigorous" others. Yet the deeper ontopolitics of this view is also clear when Ratzel emphasizes not only the *acquisition* of sufficient quantities of *Lebensraum*, but also the *reshaping* of newly acquired *Lebensraum* in ways that support certain populations rather than others, while facing a set of internal and external threats, and across an area with largely uncertain spatial contours. Particularly for the "European for whom the well-being of his people can only lie in grasping the whole world [*Weltumfassung*]" (Ratzel, 2018 [1901], 71), this ontopolitics entails the securitization of *Lebensraum* across an indefinite time horizon, and on an explicitly global scale, in ways that either marginalize or extinguish alternative modes of "being". In short, then-incipient forms of imperial *Lebensraum* – not coincidently echoing what Brand and Wissen (2021) have more recently called the "imperial mode of living" – do not only seek to secure "space for [European] life" in the narrowly territorial and biopolitical sense, but an ontological space – a prototerritory – which supports the preferred lifestyles, resource demands, and broader lifeways of biopolitically favoured populations.

3.4. Lebensraum scholarship after Ratzel

Following Ratzel's passing in 1904, several Pan-Germanic and *völkisch* geographers – most prominent among them Karl Haushofer and Alfred Penck – sought to popularize Ratzel's ideas, and particularly so after the German defeat in WWI. Amidst the rise of a revisionist climate in the Weimar Republic, Penck suggested in the 1920s that German *Lebensraum* consisted of three geographic elements. These were: i) the German Reich with its internationally recognized political borders; ii)

[5] Neither Schmitt nor Ratzel coined the term *Grossraum*, which has already been used starting in the 1860s in German literature on political economy. Yet, with Ratzel and Schmitt, it acquired a new meaning and traction (Bassin, 1987a).

Volksboden, or land where ethnic Germans still lived outside of Germany's political borders, such as in German-speaking Switzerland; and iii) *Kulturboden,* or historical regions of past German habitation, which allegedly came to impregnate these spaces with an ostensibly German cultural "character", such as in Eastern Europe (Wolf, 2016, Herb, 2003, Fahlbusch, Rössler, and Siegrist, 1989). Further still, in his position as Weimar's most important geopolitician, Haushofer also promoted this idea of a völkisch *Lebensraum* in 1933 as a manifestation of "blood and soil" politics – one that would soon be attractive to the emerging National Socialist regime (Bassin, 2005).

In particular, Lekan (2004) shows how *Lebensraum* thinking led the Nazis to racialize concepts such as "cultural landscapes" and "native species". Here, prevailing aesthetic and regionalist associations with German cultural landscapes (*Kulturlandschaften)* gave way to racist and völkisch ones (see also Varco, this issue). To this end, ecological sciences "served as a scientific justification for 'blood and soil' in the Third Reich, transforming nature parks into outdoor laboratories for investigating the optimal environmental conditions for the Germanic race" (Lekan, 2004, 173). Furthermore, landscape architects redefined the concept of indigenous species by "arguing that the Germanic race felt most at home among similarly 'native' species" (Lekan, 2004, 189). Landscape planners thus suggested not only the *acquisition* of additional "generic" *Lebensraum*, but also the adoption of more deeply *ontopolitical* land management practices, such as the planting of hedgerows in occupied Poland. Ostensibly, such practices would "Germanify" these areas and ensure durable future colonization, thereby pre-empting emergent threats to the suitability of newly-acquired *Lebensraum* (Lekan, 2004, 244). Echoing Ratzel and his disciples, Nazi conservationists saw German people as an expression of Germanic forest landscapes, having emerged organically from the plant and animal world (Driessen and Lorimer, 2016). Shortly after the occupation of Poland, for instance, German cattle breeder Lutz Heck exclaimed that "landscape protection is *Volk* protection" (Heck, 1940, cited in Driessen and Lorimer, 2016, 145). Space and race thus became enmeshed biopolitically, geopolitically, and ontopolitically through *Lebensraum* thinking, and ethnic cleansing effectively became synonymous with "a form of landscape restoration" (Driessen and Lorimer, 2016, 148).

Similar to their counterparts in geography and landscape planning, there were also influential naturalists who embraced a mixture of bio- and ontopolitically *völkisch* ideology both prior to and during the reign of the Third Reich. Austrian ethologist Konrad Lorenz, one of the founders of modern animal behaviour science and a later recipient of the Nobel Prize, applied his insights about the domestication of animals to argue that the domestication and civilization of humans led to the degeneration of race and nation (*Rasse* and *Volk* – Lorenz used the terms interchangeably), raising the risk of eventual decay and extinction (Lorenz, 1940). Here, Lorenz was following in Ratzel's social Darwinist footsteps to conceptualize the social life of humans as a permanent "struggle for food and space" (e.g. Lorenz, 1940, Kalikow, 1983). In particular, Lorenz framed domestication, civilization, and the ostensibly ever-present threat of degeneration explicitly as a question of *Lebensraum*. To Lorenz, the "*Lebensraum*" available to both "primitive" or "tribal", and "civilized" or "metropolitan" societies explained the risk of genetic and behavioural degeneration and decay (Lorenz, 1940, 7, 66–69, 74–75). After WWII, Lorenz continued spreading similar views – albeit in a largely more 'anodyne' lexicon – well into the late 1970s (Lorenz, 1973, Kalikow, 1983), and became a leading figure of the nascent Austrian environmental-green movement. By then, Lorenz' lifelong anxieties about the eventual extinction of civilization through domestication and urbanization had been somewhat refashioned into similarly pessimistic, neo-Malthusian anxieties about overpopulation in densely populated metropoles (Lorenz, 1973). In the next section, we show how related biopolitical, geopolitical, and ontopolitical aspects of Ratzel's *Lebensraum* theorizations in some ways continue to echo throughout into the present - particularly in conservation politics - albeit now in ways that often envision urbanization as a key means of "sparing" half the Earth's surface, or more, for the protection of biodiversity (see Robinson, 2018).

4. Conservation *Lebensraum*

With the term conservation *Lebensraum*, we refer to certain "features" or "structures" (Chiantera-Stutte, 2008, 188) within discourses of global biodiversity conservation that appear to reflect novel (re)combinations of biopolitical, geopolitical, and ontopolitical thought in the so-called Anthropocene. In this sense, area-based conservation initiatives may partially or more systematically reflect aspects of conservation *Lebensraum* imaginaries when*:* i) they are justified by positing a natural and organic – and hence, essential – connection between life (nonhuman or human) and space as a precondition for fostering the emergence of desired types and quantities of life, and ii) when they assign certain species or populations a particular, exclusive space in opposition to or in competition with other species or populations.[6] More specifically, conservation *Lebensraum* operates: i) *biopolitically* through its embrace of unequal impacts upon asymmetrically valued populations of (non) humans; ii) *geopolitically* through its demands for the acquisition of conservation space at globally significant scales; and iii) *ontopolitically* through the securitization of prototerritories in ways that seek to mitigate or pre-empt emergent threats to a particular *version* of biodiversity conservation in the future, for instance by waging a "War for Biodiversity" analogous to the apparently unending "War on Terror" (Keen, 2006, Massumi, 2009, Büscher, 2018).

Two recent movements that imperfectly reflect certain "features" or "structures" (Chianterra-Stutte, 2008, 188) of conservation *Lebensraum* thinking include the initiatives known as *Half Earth* and *Nature Needs Half*. Of course, this is not to say that recent conservation initiatives explicitly reproduce the precise rhetorical or *normative* substance evident within the *fin de siècle* writings of Friedrich Ratzel or his more recent intellectual legatees. Genealogically, however, there are certain conceptual resonances or resemblances between Ratzel's *Lebensraum* theorizations and the writings of prominent neoprotectionists, such as the late E.O. Wilson.[7] For instance, in his *Half-Earth: Our Planet's Fight for Life,* Wilson adopts a similarly martial analogy that (re)casts the global "struggle for biodiversity conservation" in ways reminiscent of both the Darwinian "struggle for life" and the associated Ratzelian "struggle for space" – albeit at the scale of half the planet's surface. Yet as Büscher and Fletcher (2016) rightfully caution, even though "the world Wilson's offers us in *Half-Earth* […] would have profoundly negative 'consequences if played out'", precisely "[h]ow such a global programme of conservation *Lebensraum* would be accomplished is left to the reader's imagination".

Programmatic statements of the Nature Needs Half movement, like the writings of Wilson himself, are often ambivalent about the precise extent to which such a campaign would in fact demand ever-larger volumes of more or less *exclusively* nonhuman space to minimize anthropogenic impacts on biodiversity. Indeed, recent statements appear to entertain the possibility that non-exclusionary protected areas

[6] Readers familiar with debates on land-based climate mitigation may notice striking parallels between our conceptualization of conservation *Lebensraum* and what could be called "carbon *Lebensraum*". For lack of space we cannot expand on this further, but see Bluwstein and Cavanagh (2023), Dooley et al. (2022) and Hamilton (2018) for further inspiration.

[7] E.O. Wilson's work should not be reduced to his recent advocacy for Half Earth. Wilson has published extensively on a number of key topics in biology and ecology throughout his life, amongst others on the theory of Island Biogegraphy (MacArthur and Wilson, 1967), and on the theory of Sociobiology, which he almost single-handedly popularized (e.g. Wilson, 1975, 1978, but also Dawkins, 1976). Similar to other naturalist writing during and before his time, Wilson was and remained a social Darwinist – and in this sense, Ratzelian - as it pertained to his efforts to explain the life of human societies by using analogies from the world of plants and animals.

and other "collaborative" conservation initiatives may play an important role in Half Earth futures, potentially including, for instance, conservation easements, "community based" conservation schemes, and related institutions such as Indigenous and Community Conservation Areas (ICCAs) (see, for instance, Nature Needs Half, 2023). Nonetheless, such demands for ever-larger volumes of conservation space – particularly if unchecked by adequate measures to protect human rights or if aggressively implemented – raise pressing questions concerning the risk of such campaigns implicitly constituting a form of contemporary "conservation *Lebensraum*" in practice. Particularly if one follows Michael Soulé's (1985, 727) canonical definition of conservation biology as "a crisis discipline", one whose "relation to biology, particularly ecology, is analogous to that of surgery to physiology and war to political science", the risks of such urgency translating into fortress protection of endangered species are especially palpable. As Wilson (2016, 9) himself puts it – in light of the apparent fact that "the conservation window is closing fast" – the global conservation movement ostensibly must continue to "add increasing amounts of protected space, faster and faster, saving as much as time and opportunity will allow". Yet the question remains: at precisely whose expense? Or, following Michael Soulé (1985), if the process of acquiring such protected space is "akin to war", then who, exactly, is "the enemy"?

Notably, Wilson himself is largely evasive concerning the socioeconomic or broader human wellbeing impacts of his Half Earth proposal. This is notwithstanding how, in spatial terms, the scope of his conservation ambition is undeniably vast. As he puts it:

> "I am convinced that only by setting aside half the planet in reserve, or more, can we save the living part of the environment and achieve the stabilization required for our own survival. [..] As reserves grow in size, the diversity of life surviving within them also grows. As reserves are reduced in area, the diversity within them declines to a mathematically predictable degree swiftly – often immediately and, for a large fraction, forever. A biogeographic scan of Earth's principal habitats shows that a full representation of its ecosystems and the vast majority of its species can be saved within half the planet's surface. At one-half and above, life on Earth enters the safe zone. Within half, existing calculations from existing ecosystems indicate that more than 80 percent of the species would be stabilized" (Wilson, 2016, 8-9).

Notwithstanding the vast spatial ambition of the Half Earth and Nature Needs Half movements, proponents of the latter have tried to assuage their critics (e.g. see Crist et al., 2021), assuring them that Indigenous peoples and other local communities do not necessarily have to be banned from the "natural" half of the planet as long as these spaces – and by extension, presumably, the people living there – remain "wild" and "undeveloped" (Kashwan et al., 2021, 14). In co-opting discourses of indigenous peoples' self-determination in this way, Half Earth proponents also risk reifying the image of "the noble savage" (Kashwan et al., 2021, 16) as simply Ratzelian "primitive peoples" with distinct *Lebensraum* requirements.

Although Wilson's writings are conspicuously silent about the likely anthropogenic impacts of his proposals – the word "indigenous", for instance, appears only once in *Half Earth: Our Planet's Fight for Life,* and largely in a historical context (Wilson 2016, 77) – certain implications can be inferred through an analysis of these and related writings through a tripartite lens at the interface of biopolitics, geopolitics, and ontopolitics. First, *biopolitically*, calls for Half Earth resonate with critical scholarship highlighting acute consequences of conservation interventions for asymmetrically "favoured" or "protected" strata of (non) human populations, alongside often-disavowed negative consequences, costs, or risks accruing to various marginalized "others" (Cavanagh and Benjaminsen, 2015, Bluwstein, 2018, Biermann and Anderson, 2017, Srinivasan, 2014). Cavanagh (2014, 273), for instance, summarizes these dynamics by highlighting three "primary axes" across which biopolitics operates in both conservation and broader sustainable development initiatives: "first, between differently 'racialised' populations of humans; second, between asymmetrically valued populations of humans and nonhumans; and, third, between humans, our vital support systems, and various types of emergent biosecurity threats". Pressing questions remain, in other words, about precisely who will bear the costs of "Half Earth" conservation, and who exactly will reap the benefits – particularly in the context of well-documented inequalities and asymmetrically accruing conservation impacts at multiple scales, from individual protected areas to nations and world regions (Büscher et al., 2012, Holmes and Cavanagh, 2016, Vedeld et al., 2016).

Second, *geopolitically,* calls for nonhuman nature to be conserved at the scale of half the planet echo *Grossraum* fantasies of mutually exclusive "spheres of influence": nature here, people there, clearly separated from each other. To be sure, this is more of a Schmittian "friend and foe" imaginary of humans and nature being at odds with each other than an ontologically monist Ratzelian vision, wherein the boundaries between humans and nonhumans are, in principle, dissolved. And yet, Half Earth-type conservation visions nonetheless appear to share Ratzel's *Lebensraum* logic insofar as they render global conservation governance as a perpetual struggle for space. Moreover, the sheer scale of such conservation *Lebensraum* raises the spectre of conservation colonialism – the tendency to target differently racialized populations in the Global South through the "colonisation" (whether direct or indirect) of a globally significant amount of space and territory for conservation. As a geospatial analysis by Schleicher et al. (2019) makes clear, representatively upscaling existing protected areas across all ecoregions in line with Half Earth targets could entail significant displacement and other negative impacts upon more than a billion people at current population levels and densities.

Third, *ontopolitically*, a Half Earth conservation *Lebensraum* vision simply cannot know and predict precisely which environments will become threatened through ecosystem collapse and extinction via variously anticipated natural and anthropogenic pressures in the future. What proponents of Half Earth-type approaches claim *can* be ostensibly predicted with mathematical precision is the "safe zone" for life on Earth (e.g. Wilson, 2016, 8-9). Here, the "safe zone" acquires a double meaning. First, life on Earth is within a safe zone when enough conservation *Lebensraum* has been secured for its protection. Second, life on Earth can only be secured by separating human from nonhuman populations - for instance, via unprecedented scales and rates of ostensibly 'green' urbanization, which may reduce the human population and enable "land sparing" for biodiversity conservation - or at least by insulating nonhuman populations from the often vaguely-defined "negative" impacts of anthropogenic activities. As a still-growing literature on the militarization and securitization of conservation illustrates, however, policing the separation of humans and nonhumans is no simple matter (Devine, 2014, Lunstrum, 2014, Duffy et al., 2019). Echoing Massumi's (2009) example of the neoconservative Project for a New American Century and the associated "War on Terror", securing the future of conservation *Lebensraum* likely demands the mitigation or pre-emption of a range of both real and "imagined" or projected threats. As Duffy (2014) highlights, in particular, the latter amount to a "War for Biodiversity" that is potentially both "unending" and "everywhere" (see Keen, 2006). That is to say, measures to police a Half-Earth biodiversity estate seem likely to entail law enforcement measures across an indefinite time horizon – perhaps even in perpetuity – as well as increasingly complex surveillance and security measures implemented across geographically expansive value chains for always-potentially "illegal" or "illicit" natural resources (Cavanagh et al., 2015, Adams, 2020).

This potential for a pre-emptive "war for biodiversity" to constitute a largely unending, everywhere war highlights a crucial risk of global conservation *Lebensraum,* should it be allowed to emerge or manifest in

unchecked fashion. This is particularly the case if underlying drivers of biodiversity loss rooted in compounding economic growth and associated processes of capital accumulation are neglected (Büscher et al., 2017). Differently put, a Half Earth-type conservation future – if realized – may help to sustain rather than challenge the "imperial mode of living" of the most privileged populations living on Earth (Brand and Wissen, 2021), whilst simultaneously magnifying existing regimes of conservation militarization, securitization, and surveillance that already asymmetrically impact some of the world's poorest human populations.

Importantly, analysis through the lens of conservation *Lebensraum* also helps to explain the consistent and unrepentant preoccupation with human population growth that many neoprotectionists demonstrate (e.g. Wilson, 2016, Dodson et al., 2020, Cafaro et al., 2022, Crist et al., 2022). In this reasoning, the human population is problematized in multiple ways: ontopolitically, as a harbinger of the annihilation of future life on earth; biopoliticially, as a species to be actively managed in the present; and geopolitically as an entity that needs to be spatially contained within the limits of its ostensibly "proper" *Lebensraum*. Accordingly, acting on the population requires its reduction such that life can again be wrestled from a singular "humanity" understood as an apparently "cancerous" force (Cafaro, 2015). However, while future population growth projections are available and their predictive power is not disputed, what remains largely unknown from the standpoint of neoprotectionists is the exact carrying capacity for a conservation *Lebensraum*-compatible human population in the Anthropocene. In other words, it is largely impossible to predict, with any meaningful precision, how many people are too many – particularly given that the ontopolitical objective of conservation is to prevent the extinction and annihilation of life against a range of unknown socio-ecological threats. Rather than advocating for a concrete goal in precise terms then (say 5 billion people by 2100), neoprotectionists thus often end up focusing on (vaguely defined) birth control policies in the present (typically couched in feminist rhetoric of women's rights), which are expected to pre-emptively make space for (non)human life in an uncertain future. In order to pre-empt critique concerning the potentially significant social consequences of the population displacement and concentration consequent to the Half Earth proposal (e.g. Schleicher et al., 2019), the focus on decreasing human population numbers becomes essential. In this way, competition for *Lebensraum* among humans and nonhumans can theoretically be mitigated through a set of bio- and geopoltical interventions without recourse to more coercive measures of the type that have been associated with past and ongoing fortress conservation initiatives, such as often-violent evictions or displacements (Dowie, 2011).

5. Conclusion

Revisiting the concept of *Lebensraum* ("living space") through the *fin de siècle* thought of German geographer Friedrich Ratzel, as well as several of his interlocutors and intellectual legatees, this paper traced the (re)emergence of what we have termed conservation *Lebensraum*, or the biopolitical, geopolitical, and ontopolitical reconstitution of conservation governance at the planetary scale. As we have suggested, an analysis through the lens of conservation *Lebensraum* foregrounds: i) the biopolitical population management of various, asymmetrically valued populations of humans and nonhumans; ii) the geopolitics of conservation expansion and occupation at globally significant scales; and iii) the ontopolitical ambition to secure proto-territories reserved exclusively for the protection of (a specific vision of) nonhuman life against the background of emergent socio-ecological threats in the future. In short, the concept of conservation *Lebensraum* presents new opportunities for rethinking complementary relations not only between biopolitics and geopolitics, but also ontopolitics, insofar as conservation *Lebensraum* signifies a politics of pre-emptively securing life's future amidst multiple socio-ecological crises.

Ratzel's own *Lebensraum* theorizations led him to justify organically conceived state expansion and colonisation to accommodate for population growth, and thus to address the Malthusian trap. While similarly concerned with the alleged problem of human overpopulation in space, some contemporary conservationists go a step further by conceptualizing human and nonhuman life in dualistic terms (thus departing from Ratzel) in order to maintain that the solution lies in limiting human population growth and human expansion in order to conserve biodiversity – understood as the source of all life, or life itself – through nonhuman expansion in space. In recombinant form, certain "features" or "structures" (Chianterra-Stutte 2008) of *Lebensraum* imaginaries thus remain alive in contemporary manifestations of neo-Malthusian or neoprotectionist thought.

Yet it is precisely this fixation on (over)population, paired with a dualistic understanding of nature separate from humans, that sets up conservation *Lebensraum* approaches to permanently and endlessly wage a war for biodiversity via *reservation* and *militarization* against an ever-present, always potentially threatening, and largely undifferentiated "humanity". Overcoming the logic of conservation *Lebensraum* (the Ratzelian bio-, geo-, and ontopolitical struggle for conservation space) thus dovetails with the broader imperative of *decolonizing* conservation in the so-called Anthropocene, such that "alternative sustainabilities" or constellations of integrated human-nonhuman relations become possible (Youdelis et al., 2021, Collins et al., 2021, Cavanagh and Benjaminsen, 2017, Whyte, 2018).

But how, exactly, might we envision such alternatives? Or, with Vito De Lucia (2020, 329), how can we "escape the biopolitical reframing and enframing of the Earth and its total subsumption under its matrix of control"? What, in other words, could an anti-, or post-*Lebensraum* conservation politics look like, and how might it draw inspiration from already existing approaches to conservation that eschew a Ratzelian struggle for space?

Here, we suggest that Indigenous, decolonial, and degrowth scholarship and practice can serve as sources of inspiration, although they can also raise critical questions of their own. On the one hand, these insights foreground an ethics of abundance, care, and commoning (Fujikane, 2021, Liboiron, 2021, Kallis, 2019), while recognizing and emphasizing reciprocal ties and relationality between humans and nonhumans (Singh, 2022, Goldman, 2020, Kimmerer, 2013), and challenging eco-modernist and militarized solutions to socio-ecological crises (Whyte, 2017). In short, these approaches emphasize that land and resources must not be alienated through logics of *Lebensraum* (in a Ratzelian struggle for life in space), be it for conservation, carbon sequestration, or other instrumental ends. Here, Indigenous, decolonial, and more-than-human critiques of western conservation converge with insights from Marxist, degrowth, and political ecology scholarship (Singh, 2022, Hope, 2021, Kashwan et al., 2021, Büscher et al., 2017). Jointly, these approaches foreground economic growth, capital accumulation, and an entrenched Western nature-culture dichotomy as underlying drivers of the biodiversity crisis, thus rejecting the neo-Malthusian notion of a singular, always potentially "cancerous" humanity (Cafaro, 2015). Without addressing the underlying drivers of biodiversity loss, these perspectives suggest it is unlikely that even dramatically upscaled conservation efforts will be able to achieve theiro bjectives.

On the other hand, some strands in critical scholarship – particularly when foregrounding more-than-human, posthuman, and new materialist standpoints – tend to embrace vitalist politics (Schulz, 2017, Ghosh, 2020), thereby risking to reintroduce the logic of *Lebensraum* through the backdoor of ontological monism, as it were (Klinke, 2019). How to eshew a Ratzelian dark materialism underpinning a *Lebensraum* logic of an inevitable struggle for life in space - while 'making space' for Indigenous and more-than-human ontologies within efforts to redress processes of compounding economic growth - will remain an important conversation alongside efforts to more sustainably integrate human and nonhuman interests in the future.

CRediT authorship contribution statement

Jevgeniy Bluwstein: Conceptualization, Writing – original draft, Writing – review & editing. **Connor Cavanagh:** Conceptualization, Writing – review & editing. **Robert Fletcher:** Conceptualization, Writing – review & editing.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

No data was used for the research described in the article.

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