A faultline in neoliberal environmental governance scholarship? Or, why accumulation-by-alienation matters

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Environment and Planning E: Nature and Space

Abstract: This article identifies an emerging faultline in critical geography and political ecology scholarship by reviewing recent debates on three neoliberal environmental governance initiatives: Payments for Ecosystem Services (PES); the United Nations programme for Reducing Emissions from Deforestation and Forest Degradation in Developing Countries (REDD+); and carbon-biodiversity offsetting. These three approaches, we argue, are characterized by varying degrees of contextual and procedural—or superficial—difference, meanwhile exhibiting significant structural similarities that invite critique, perhaps even rejection. Specifically, we identify three largely neglected 'social engineering' outcomes as more foundational to PES, REDD+ and carbon-biodiversity offsetting than often acknowledged, suggesting that neoliberal environmental governance approaches warrant greater critical attention for their contributions to advancing processes of colonization, state territorialization and security policy. Examining the structural accumulation strategies accompanying neoliberal environmental governance approaches, we offer the term 'accumulation-by-alienation' to highlight both the objective appropriations accompanying PES, REDD+ and offsetting and the relational deficiencies accompanying the various commodifying instrumentalizations at the heart of these projects. We concur with David Harvey's recent work proposing that understanding the iterative and consequential connections between objective/material and subjective/psychological dimensions of alienation offers 'one vital key to unlock the door of a progressive politics for the future'. We conclude (with others) by urging critical geography and political ecology scholars to cultivate research directions that affirm more radical alternatives, rather than reinforcing a narrowing focus on how to improve PES, REDD+ and offsetting in practice.

Keywords: Payments for Ecosystem Services (PES); Reducing Emissions from Deforestation and Forest Degradation in Developing Countries (REDD+); offsetting; neoliberal environmental governance; social engineering; alienation; accumulation-by-alienation

Highlights:

- We identify an emerging faultline in critical geography and political ecology scholarship of neoliberal environmental governance.
- We argue that social engineering is more foundational to PES, REDD+ and carbon-biodiversity offsetting than is often acknowledged.
- We extend recent analyses of structural accumulation strategies effected through diverse neoliberal environmental governance approaches to contribute the term 'accumulation-by-alienation'.
- Accumulation-by-alienation emphasizes both objective/material and subjective/psychological estrangements accompanying PES, REDD+ and offsetting as broadly neoliberal environmental governance strategies.
- We propose the cultivation of research directions that move beyond a narrowing focus on how to improve PES, REDD+ and offsetting in practice.

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1. Introducing neoliberal environmental governance

A recent paper published in *Environment and Planning E* comparing trajectories of 'ecological offsetting' in California and England observes that 'comparative studies remain something of a rarity' in considerations of market-oriented conservation approaches as technologies of 'neoliberal natures' (Lockhart and Rea, 2019: 2). We mostly concur with this observation. There have been some attempts to draw attention to how diverse market-based instruments (MBIs) in environmental governance act in tandem to structure socioecologies for integration into variously marketized exchanges (for example, Bracking et al., 2018; Dempsey, 2016; Robertson, 2011; Sullivan, 2010, 2012, 2013a, 2018a). There have also been efforts to compare in empirical detail specific and interacting cases of new economizing approaches to environmental governance (for example, Sullivan and Hannis, 2017 on natural capital accounting and biodiversity offsetting in the UK/England). Still, scholarship regarding neoliberal environmental governance technologies often focuses on specific types of MBIs in particular sectors of environmental management. Space does not permit a full listing of critical geography scholarship along these lines. Examples include Robertson's (2004, 2006, 2009, 2011) sustained engagement with entrepreneurial processes of 'neoliberalization' in US wetland mitigation banking; Pawliczek and Sullivan's (2011) analysis of 'neoliberal performance' in US species banking in terms of criteria set out in Castree (2008a, 2008b) and Kosoy and Corbera (2010); Asiyanbi's (2017) analysis of numbering and accounting practices in service to 'markets-in-the-making' in REDD+; and Carver and Sullivan's (2017, 2018) ethnographic engagement with a two-year negotiation of a specific biodiversity offset contract in England.

As with Lockhart and Rea's (2019) comparison mentioned above, such analyses often demonstrate that 'the devil is in the detail' in terms of the extent to which MBIs in environmental governance conform to idealized notions of neoliberalization (Castree, 2008a, 2008b; McCarthy and Prudham, 2004; Sullivan, 2006), and either facilitate or generate frictions in the concentration and accumulation of capital (Asiyanbi, 2017; Bakker, 2010; Brock, 2015; Dempsey

and Suarez, 2016; Lave, 2018; Sullivan, 2018b). Nonetheless, we contend that a proliferation of specific sectoral analyses may risk downplaying both 'big picture' effects of market-oriented environmental governance approaches, and broader scholarship concerned with spatially uneven, and often unjust, dimensions of environment and development initiatives (Fairhead et al., 2012; Harvey, 1996; Sassen, 2010). This would be unfortunate, given the deepening inequalities associated with neoliberal structuring more broadly (Harvey 2018: 143; Piketty, 2014; Springer et al., 2016), observed links at different scales between deepening societal inequality and environmental damage (Mikkelson et al., 2007), and empirical research demonstrating limited conservation effectiveness of monetary valuation in environmental management (Temel et al., 2018). If it is the case that market-oriented environmental governance deepens socioeconomic inequity and socioecological alienation, then critical geography and political ecology scholars concerned with the sustenance of socionatural abundance (Collard et al., 2014) might ally more clearly to reject environmental governance technologies that deepen marketized forms of socioecological relations.

Against this background, in this paper we draw on and extend recent debates relevant to critical geography and political ecology that seem to us significant for understanding the structural and structuring implications of three interwoven neoliberal environmental governance technologies: Payments for Ecosystem Services (PES); the United Nations programme for Reducing Emissions from Deforestation and Forest Degradation in Developing Countries (REDD+); and carbon-biodiversity offsetting. Our intention is not to provide a summative review of PES, REDD+ and offsetting, which in any case would be impossible in a short journal article. Instead, we distil recent vigorous debates in the literatures pertaining to these three governance approaches, so as to highlight areas of disagreement between scholars (see Section 3 and references therein). We argue that while the three approaches are characterised by 'variegated uptake' (Van Hecken et al. 2017) and varying degrees of contextual and procedural difference, they also exhibit significant structural similarities that invite structural understanding and critique.

In Section 2 we provide a brief summary of how we understand 'neoliberalism', clarifying why we consider this a relevant political economy frame for understanding the proliferation of, and intersections between, the environmental governance technologies discussed in the debates we

summarise in Section 3. Consideration of *superficial* differences and *structural* similarities in PES, REDD+ and offsetting, approached through integrated reading and review of recent lively published debates, forms the basis of Section 3. On Section 4 we identify three somewhat neglected 'social engineering' outcomes that we argue are more foundational to PES, REDD+ and carbon-biodiversity offsetting than is often acknowledged. We suggest these dimensions may warrant greater attention in the comparative study of neoliberal environmental governance approaches, given their roles in deepening, rather than contesting, ongoing processes of colonization, state territorialization and security policy (Holmes, 2014; Käkönen and Thuon, 2018; Peluso and Lund, 2011; Rasmussen and Lund, 2018). In Section 5 we extend recent analyses of structural accumulation strategies effected through diverse neoliberal environmental governance approaches. We use the term 'accumulation-by-alienation' to highlight both the objective appropriations revealing PES, REDD+ and offsetting as broadly neoliberal environmental governance strategies, and the relational deficiencies accompanying the variously commodifying instrumentalisations at the heart of these approaches. In doing so, we concur with recent work by geographer David Harvey (2018: 149) suggesting that '[t]he theory of objective alienation along with an understanding of its subjective consequences is one vital key to unlock the door of a progressive politics for the future'. We also affirm the mutually reinforcing connections between these two key facets of alienation. We conclude (with others) by urging critical geography and political ecology scholars to cultivate research directions that affirm more radical alternatives, rather than reinforcing a narrowing focus on how to improve PES, REDD+ and offsetting in practice.

2. Intersecting neoliberalism and environmental governance

By 'neoliberal' and 'neoliberalism' we refer to the coalescing – in particular moments and strategies of governance – of globalizing political and economic policies that entangle public and private sectors in ways that shift both public provision and public assets to the private sector. Following the 1970s capture of South American governments (especially in Chile) by Chicago School economic theory, a key moment was the so-called Washington Consensus of 1989 – also the year in which the fall of the Berlin Wall signalled the end of the Cold War polarising broadly capitalist and communist states. The Washington Consensus comprised 10 specific economic

policy reforms that restructured lending to states by International Financial Institutions (IFIs) whose shareholders are governments/countries (Williamson 2004-2005). These policies became lending conditionalities (from IFIs to recipient states) and included various forms of trade liberalisation that opened new markets to private sector interests, often aggressively so – as critiqued by former chief economist to the World Bank, Joseph Stiglitz (2002). Transnational consolidations of sovereignty/power have thereby been effected through particular combinations of state and corporate/private interests, the latter of which are also transnational. Major International Non-Government Organisations (INGOs) and Environmental Non-Governmental Organisations (ENGOs) combining charitable and private sector concerns have mushroomed in this context to fill the facilitating and implementation vacuum left in circumstances of weakened states and public sectors. The varied ways in which the combination of such restructuring processes vested sovereignty, i.e. decision-making powers, in locations beyond the nation state was famously termed *Empire* by Hardt and Negri (2000).

Neoliberalism involves mechanisms, frameworks and infrastructure that commoditize aspects of the world such that these can be governed by 'the market' and thereby become subject to the drivers of economic growth, profit, competition, and innovation. The Coasian assumption that an optimal allocation of environmental 'goods' and 'bads' (with least transaction costs and greatest efficiency) will emerge from unconstrained bargaining of market participants thus dovetailed neatly with the misleading and highly ideological 'insights' of Garrett Hardin's (1968) 'Tragedy of the Commons', producing a self-reinforcing logic that justifies privatization of land, commons and resources (Aguilar-Støen, 2017; Coase, 1960; Muradian et al., 2010: 1203; Sullivan, 2017a). All these phenomena are increasingly relevant to environmental concerns. Critical geography and political ecology scholars have thus framed intersections of neoliberal capitalism and nature(s) variously as 'selling nature to save it' (McAfee, 1999), 'neoliberal nature' (McCarthy and Prudham, 2004), 'neoliberal biodiversity conservation' (Sullivan, 2006), 'neoliberal conservation' (Igoe and Brockington, 2007; Büscher et al., 2012), 'neoliberal ecologies' (Castree, 2007), 'neoliberal environments' (Heynen et al., 2007), 'neoliberal environmentality' (Fletcher, 2010), 'saving nature to trade it' (Sullivan, 2013a: 200), and 'enterprising nature' (Dempsey, 2016).

Noel Castree (2008a, 2008b; iterating Heynen and Robbins, 2005) reviewed processes of privatization, de- and re-regulations of state power, and the marketization/commodification nexus in the context of changing natural resource management, as critical aspects of a contemporary 'neoliberalisation of nature'. In this coalescence of governance discourses, technologies and policies, 'market friendly re-regulation' occurs as state policies are deployed 'to facilitate privatisation and marketisation of ever wider spheres of social and environmental life' (Castree, 2008a: 142). Thus although many champions of neoliberalism celebrate it as reducing state power, the state's role tends in reality to be transformed to provide appropriate regulatory and supportive structures for the existence and functioning of commodity markets (Castree, 2008a: 144). For Büscher et al. (2012: 18), therefore, 'neoliberal conservation' forms part of a neoliberal world in which *states* purport to attend to environmental problems by outsourcing these to private sector management and investment, consistent with broader neoliberal policies shifting public assets and utilities towards management by the private sector. Instead of being the entity that protects and provides public goods the market system has failed to provide, in neoliberalism the state essentially becomes a market facilitator (Sullivan, 2012: 9), providing policy, legislative and regulatory support for the transfer of public goods to new patterns of allocation established through marketized exchanges of variously alienated commodities. As such, it seems hard to avoid the structuring significance of what Foucault (2008[1978-79]) called the 'truth regime' of the market: an ordering 'truth' necessitating work to create the governing, incentivizing and regulatory structures associated with the 'free market's' need for 'frugal government'. This, as Castree (2008a: 144) notes, is 'the paradoxical need for "free" markets to be managed'.

In combination then, neoliberalism produces a 'governmentality' – an art of government – that ironically requires intense government and public engagement to facilitate the construction and regulation of the incentive structures that discipline individual and corporate behaviour, such that these conform to the logic of the 'free market' (as multiply elaborated in Heynen et al., 2007). In other words, the 'DNA' of neoliberal policy is found in a particular combining of state-corporate/public-private interest (cf. Foucault, 2008[1978-79]) that, as we discuss in Section 4, may become defended and protected by states when significantly contested (Eschle and Maiguascha, 2005; Sullivan et al., 2011). Springer et al. (2016: 2) thus frame neoliberalism as a relatively 'new political, economic, and social arrangement within society that emphasizes

market relations, re-tasking the role of the state, and individual responsibility,' to effect 'the extension of competitive markets into all areas of life'.

Remembering Polanyi (2001[1944]), and as understood in diverse analyses of neoliberal environmental and conservation policies, we consider neoliberalism to be an economic system, apparatus and mode of governance socially engineered and enforced by state policies to transform the provision of public – including environmental – goods and services. As such, neoliberalism extends an impetus present in the western world since at least Napoleonic times whereby the state becomes 'an instrument of domination by the bourgeoisie' (Benjamin 1999[1930s]: 16) to continue processes of resource access and control and thereby to effect 'ecological conquest'. While we agree with Lave (2018: 55) that market-oriented conservation's 'impacts on people and landscapes are far from neo,' it should be clear from the discussion above that we also consider the term 'neoliberalism' valuable in signalling specific organizational, technological and financial intensifications associated with the post-Fordist era (also see Mueller and Sullivan, 2015; Nealon, 2008).

Having set the scene with regard to our perspectives on neoliberalism and the literatures on the neoliberalization of natures, we now turn to our distillation of recent debates regarding PES, REDD+ and carbon-biodiversity offsetting.

3. Debates in PES, REDD+ and offsetting: superficial differences and structural similarities in neoliberal environmental governance

In this section we read together a series of lively – even vociferous – recent debates regarding PES, REDD+ and offsetting as neoliberal environmental governance technologies. Our intention, discussed further in Section 4, is to draw out what we consider to be an emerging 'faultline' in critical scholarship regarding these approaches to socioecological governance.

Payments for Ecosystem Services (PES)

The term 'service provider' to refer to vital flows and cycles from the natural environment has been used by conservation biologists since the late 1970s (for review see Gómez-Baggethum et

al., 2010; Sullivan, 2009). In the same year as the ratification of the Kyoto Protocol of the 1992 United Nations Framework Convention on Climate Change (UNFCCC), the first Payments for Ecosystem Services pilot program in Costa Rica appeared called *Pago por Servicios Ambientales* (PSA). This program sought to provide payments that would ensure in combination the 'ecosystem services' provided by carbon sequestration, clean water, biodiversity conservation, and scenic beauty (Fletcher and Breitling, 2012: 405). Now spread across the globe, PES projects are orchestrated at both national and local scales and are involved in: conserving forests, biodiversity, wetlands and wildlife; preventing soil erosion and deforestation; and producing energy (e.g. through biofuels, timber) (McElwee et al., 2014; McElwee, 2017). Participation in PES projects can be voluntary, but also technically mandatory, as in Guatemala, where McElwee et al. (2014: 425, after Pagiola et al., 2010) assert that PES is effected by the state through 'mandatory use of general taxes, rents, or user fees on all citizens'. PES initiatives have been documented to operate on both private and social/common property (Muradian et al., 2010) and to involve various types of payments in return for specified pro-environmental practices (Wunder et al., 2008). Payments include cash-payments, compensation or rewards (e.g. public works, infrastructure improvement), funds for investment into microenterprise or development projects, and technical materials (e.g. fertilizers, tree seedlings and other technical inputs) (McElwee et al., 2014).

Fletcher and Breitling (2012) and others (McAfee and Shapiro 2010; McElwee et al., 2014; Sullivan 2009, 2012) have shown that PES schemes are rarely strictly limited to the private sector. As with neoliberal policies more generally (see Section 2), PES schemes require considerable state intervention and private-public cooperation to establish projects and create frameworks for measuring and monitoring ecosystem impacts and administering payments (Robertson, 2011). This complexity led McElwee et al. (2014: 424) to criticize a perceived emphasis on the role of the private sector in the 'neoliberal natures' literature, contending that PES fails to be somehow 'properly neoliberal' because it does not completely privatize 'public goods', or alienate local participants, and does not necessarily imply the retreat or deregulation of the state. This critique, however, seems to neglect the breadth and depth of work on 'neoliberal natures' (Castree, 2008a, 2008b; Heynen and Robbins, 2005; Heynen et al., 2007; Lave, 2012; McCarthy and Prudham, 2004; Ulloa, 2013[2005]) as well as 'neoliberal conservation'

specifically (Büscher et al., 2012; Duffy, 2002, 2015; Fletcher and Breitling, 2012; Huff, 2017; Käkönen and Thuon, 2018; Pawliczek and Sullivan, 2011; Sullivan, 2006; West et al., 2006; Silva and Motzer, 2015), detailing the territorial governance strategies effected through complicated *public-private* dynamics that link environmental performance with payments in various ways (as discussed in Section 2). Indeed, most scholars of 'neoliberal conservation' take a conspicuously Foucauldian (2008[1978-79]) approach that understands neoliberalism to be a particular intensification of governmentality through which the state is enrolled and extended through market-oriented provision in various ways (see, Büscher et al., 2012; Fletcher, 2010; Pawliczek and Sullivan, 2011; Roth and Dressler, 2012; Sullivan, 2006, 2012, 2018b).

A recent debate on PES in the journal *Ecological Economics* clarifies this difference in the work of scholars concerned with PES. In the initial article, informed by detailed field research in association with Costa Rica's PSA program, Brett Matulis (2014) explains six structural PES problems in relation to social justice. First is the placement of an exchange value on ecosystems 'to bear value in capitalist circulation', which leads towards commodification, and thereby weds (to various degrees) 'ecosystem services' with accumulation, or attempted accumulation strategies (see Büscher and Fletcher, 2015; Smith, 2007). Second, market-based approaches to conservation are argued to be antithetical to social and ecological well-being because markets are an undemocratic means for resource management that tend to align decision-making and profit with those who already have elite standing. Responding to claims that PES is not entirely market-based (as outlined above), Matulis' third point explains how 'the conceptualization of ecosystems as "service providers"' will still in effect lead towards exacerbating wealth and health disparities, in part because – fourth – local elites are better positioned to reap the benefits from PES projects than peasant and indigenous groups, who may become further marginalized as previously unpaid for ecosystem services become valued monetarily (see, Fletcher and Breitling, 2012; Osborne, 2013). Fifth, economizing valuations of nature through discursively constructing, as well as practically extending, the grid of economic valuation over the natural environment so as to attract investors, tends to encourage land grabbing (Dunlap and Fairhead, 2014; Fairhead et al., 2012) through raising land values and setting in motion empirically observed acts of expropriation (Matulis, 2017; Osborne, 2013). Finally, previously ecologically sustainable activities by collectively or socially held land regimes can be devalued as relationships and values sanctioned

by PES programs become privileged. Structurally, then, Matulis (2014) argues that the result is a consolidation of public-private alliances that marginalizes prior ecosystem management provision and practices, and that facilitates resource transfers to those able to consolidate control.

Highlighting 'a series of flaws in Matulis' argument,' Esteve Corbera (2015: 154) responds by making three substantive points. First, and drawing on Pirard (2012), he asks that different market and valuation systems are clarified, pointing out that these are not homogeneous and have various outcomes, one of which is that people can reorient PES programs to their advantage (see also McAfee and Shapiro, 2010; Shapiro, 2013; Van Hecken et al., 2018). Second, while agreeing with issues raised by Matulis, Corbera asserts that PES programs can have positive benefits (e.g. they may clarify land tenure regimes), whilst their problems might not be peculiar to PES since they can exist in other conservation projects as well. Third, Corbera (2015: 156) raises the issue of 'justice,' contending that there have been some positive benefits from PES projects framed as 'paradoxically built on inequality but designed to reduce it'. He thus reminds readers that 'justice' has different meanings for different people, such that researchers need to be careful about imposing their own sense of justice and cautious about homogenizing PES programs in their analyses.

Matulis' critique, however, is that although state-market hybrids and popular contestations may modify the initial terms of PES initiatives, these initiatives are reinforcing and intensifying a neoliberal mode of governance by extending 'the economic logic of monetary valuation, which is a necessary condition for future marketization' (Matulis, 2015: 159; also Robertson, 2011). One outcome observed in Costa Rica is 'an over-simplification of values that can undermine ecological sustainability by promoting short-term values of "competitive land uses"' (Allen, 2018). Thus, "the PES Conceit" (Fletcher and Büscher, 2017; critiqued by Van Hecken et al., 2018), constrains possibilities to neoliberal solutions, even as the implementation of these solutions often does not work out as putatively planned (Fletcher and Büscher, 2019). The point made by Matulis (2015: 159) and Fletcher and Büscher (2019) in this debate is thus that PES, in all its particularities and variants, strengthens specific processes of state-market control that consistently foreclose alternative socio-ecological propositions, practices and values.

Reducing Emissions from Deforestation and Forest Degradation in Developing Countries (REDD+)

As Corbera (2012: 616) describes, REDD+ projects that pay for the conservation, sustainable management and enhancing of forest carbon in developing countries 'can be conceptualized as the largest PES experiment in the world'. Emerging from the same general environmental concerns of PES, REDD+ is connected with the United Nations Framework Convention on Climate Change (UNFCCC) view that deforestation is a preeminent contributor to anthropogenic climate change, requiring economic incentives for the protection and better management of tropical forests (Aguilar-Støen et al., 2016; Corbera, 2012; Svarstad and Benjaminsen, 2017). The public-sector supported and administered market-oriented approaches of PES are thereby applied specifically to forest carbon, placing an economic value on standing tree biomass through carbon accounting practices that quantify carbon values, which can then be monetized through payments to individuals, communities, land owners, NGOs or governments in developing countries (Asiyanbi, 2017; Corbera, 2012; Dunlap, 2015; Ehrenstein and Muniesa, 2013; Ervine, 2018; Lohmann, 2009, 2014).

The same logic of enclosing, rendering legible and quantifying ecosystems in monetary values in PES thus emerges in REDD+ on a larger scale, geared specifically towards afforestation, reforestation and conservation activities (Cavanagh et al., 2015; Corbera, 2012; Dunlap, 2015; Sullivan, 2010). Based on a market-centric and private-public model, REDD+ projects are supported by donor states (notably Norway), international institutions (such as the World Bank and the Food and Agriculture Organization of the United Nations (FAO)), and private investors and intermediaries (Cavanagh et al., 2015; Sullivan, 2018b; Svarstad and Benjaminsen, 2017). REDD+ projects are diverse in terms of their funding mechanisms and specific projects, often using varied methods of conservation-linked payments which can be subsidized by clean development mechanism (CDM) donors connected with the Kyoto Protocol, or by voluntary carbon 'cap-and-trade' mechanisms (Aguilar-Støen et al., 2016; Böhm and Dabhi, 2009; Dunlap, 2015). A key current distinction between PES and REDD+ is that REDD+ is in the process of developing an internationally applicable measurement, reporting and verification (MRV) scheme to monitor forest carbon levels (see UN-REDD Programme, n.d.), which delegates responsibility to countries to establish their own REDD+ MRV accountability systems that provide transparent,

comparable and conservative forest carbon estimates (see Asiyanbi, 2017; Ehrenstein and Muniesa, 2013; Svarstad and Benjaminsen, 2017). REDD+ constitutes one of the largest 'natural-capital-accounting' projects in various stages of preparation and implementation around the world, by integrating forests into global market-based governance so as to extend forest conservation practices whilst also creating possibilities for financial returns from forest carbon investment (as reviewed in Sullivan, 2014, 2018a).

Critique of REDD+ is extensive. Reviewing the outcome of climate change mitigation practices, and echoing concerns expressed above with regard to PES schemes, Carol Hunsberger et al. (2017: 6), argue that REDD+ schemes tend to: disregard 'the views of rural communities, indigenous peoples and opposing actors, while failing to address the fundamental causes of deforestation and degradation'; cause local people to risk losing 'use and access rights to forest resources'; further entrench 'existing inequities if they do not explicitly prevent elite capture of benefits'; reduce complex ecosystems to a single commodity, consequently stripping away different qualitative, ontological and cultural values; expand various local, national and international grids of governance over environments that often conflict with each other; be resource intensive and require large institutional/administrative capacities; 'encourage centralization of forest governance' instead of fostering decentralization, as claimed; and retain a high potential to promote conflict at various levels (see also Aguilar-Støen et al., 2016; Aguilar-Støen, 2017; Cavanagh et al., 2015; Dunlap and Fairhead, 2014; Huff, 2015).

This critique is positioned alongside recent debate in *Conservation Biology* regarding REDD+ success and failure (Angelsen et al., 2017; Fletcher et al., 2016, 2017). Fletcher et al. (2016: 673-5) assert that people need to prepare for the failure of REDD+ which instigates conflict and privileges market-based instruments built on an inherently flawed logic. As with Matulis above, Fletcher et al. (2016) advocate a move away from market mechanisms and 'toward[s] a more fundamental redistribution of resource control in order to rein in extractive expansion and put land back under local control to manage as commons'. Angelsen et al. (2017: 718-20) abruptly disagree, claiming that the problems with REDD+ are that: it has not been implemented 'at the scale needed to make a difference'; it has moved away from a PES model and has become dependent on state subsidies, resembling previous conservation efforts; it 'has been blocked by

powerful actors interested in maintaining the status quo', specifically members of government and entrepreneurs; and it 'is conceptually flawed in its [present] design as a PES and MBI [market-based instrument] scheme,' but nonetheless can be fixed.

Angelsen et al. (2017) thus contend that REDD+ needs to be intensified, not only in scale, but in its application of market-based principles, arguing that historical factors (developmental histories and culture) rather than design are the barriers to the program's progress overall. In response, Fletcher et al. (2017: 1) note the 'confirmation', from Angelsen et al. (2017) that a 'global carbon market has not materialized and is unlikely to emerge' and that REDD + has largely evolved into a light form of "result-based aid."' Fletcher et al. (2017) argue further that: REDD+ is a public-private mix that requires sellers of ecosystem services (forest carbon) to have 'their entire opportunity cost' of switching from palm-oil/extractive profits to conservation covered; while REDD+ may have evolved away from a strictly (market-based) PES model in certain respects, both PES and REDD+ rely on state enforced 'legal prohibition and land-use change', which includes militarized enforcement of 'environmental' and 'wildlife crime' (see Dunlap and Fairhead, 2014; Massé and Lunstrum, 2016); Angelsen et al. (2017) have not acknowledged the structural and epistemic violence(s) of ecosystem commodification or the potential for 'green grabbing' created by the formation of a natural capital 'asset class' in REDD+ programs (see Sullivan, 2014, 2018b); and that REDD+ administrators should be preparing for the fallout from this conservation project that is failing to provide the benefits promised.

Carbon-Biodiversity Offsetting

Offsetting is intimately entwined with the histories of both PES and REDD+. Offsetting logics contend that when economically driven ecological degradation occurs in one place, action by those responsible can 'offset' a portion of that ecological damage by providing payments and projects that measurably improve ecological indicators at another site, and often at a future time (Carver and Sullivan, 2017; Lockhart and Rea, 2019; Pawliczek and Sullivan, 2011; Robertson, 2004, 2006; Sullivan, 2013a). Offsetting is linked with the rise of pollution markets, especially in the US from the 1970s (as noted above), as well as those based on the Kyoto Protocol (1997).

In considering the latter, three mechanisms were proposed for the offsetting of CO_2 emissions so as to mitigate emissions-associated climate change. In emissions trading, pollution beyond a set limit ('cap') can be 'offset' through purchase, at a negotiated price, of allocated 'carbon credits' from less polluting industries ('trade'). This requires quantification of industrial emissions, the setting of limits, and the creation of incentive structures to encourage companies and industries to measurably meet these limits (Asiyanbi, 2017; Böhm and Dabhi, 2009; Ehrenstein and Muniesa, 2013; Lohmann 2009, 2014; Svarstad and Benjaminsen, 2017). Secondly Joint Implementation (JI) allows 'developed' countries unable to meet their emission reduction targets to invest in a qualifying 'green' or emission reduction project in another industrialized country. One major review of JI notes that the scheme may have raised rather than reduced the emissions that might have been released in the absence of a market (Schneider and Kollmus, 2015). Thirdly the Clean Development Mechanism (CDM) requires that companies from the Global North place 'additional' investment into qualifying 'green' development projects in the Global South. Developed countries' emission targets can thus be met by 'investing in the developing world (where, labor and other costs are usually lower)… [w]hile simultaneously the South would benefit from the transfer of "clean technologies"' (Böhm and Dabhi, 2009: 13). However, CDM projects have been documented to amplify industrial-scale ecosystem degradation, social conflict and human rights abuses in many contexts (see, for example, Böhm and Dabhi, 2009; Checker, 2009; Dunlap, 2017a, 2018a, 2019; Dunlap and Fairhead, 2014; Fearnside, 2013; Huff, 2015; Hunsberger et al., 2017; Mate and Ghosh, 2009). In tandem, these national and international policies fostering pollution markets in CO_2 at different scales have also been associated with volatile voluntary offset exchanges extending beyond carbon and into other 'ecosystem services', through a variety of legal as well as self-imposed regulatory and certification mechanisms.

With regard to biodiversity-offsetting (BDO), international collaboration around offsetting 'solutions' to biodiversity loss has again been engendered through governance alliances of states, IFIs, corporations, and international environmental organisations. In this case, the Business and Biodiversity Offsets Programme (BBOP)[1] – an international consortium established under the umbrella of the market-oriented Forest Trends group – developed global principles and standards for biodiversity offsets (Benabou, 2014; Sullivan, 2013a). Again, a policy focus has been on

[1] See http://bbop.forest-trends.org/

developing methods for calculating apparent commensurability and substitutability between units of species, sites and habitats under inalienable property designations, thereby creating the possibility of trade in these units between locations chosen for 'unavoidable' harm due to development and extractive industry, and locations chosen for investment in conservation. A growing number of states are drawing up national policies for the enabling and regulation of BDO, accompanied by nascent regional policy such as the European Union's No Net Loss initiative (EU NNLi). This combination of emergent national and regional policy frameworks with the participation, via BBOP, of multinational corporate and financial institutions in BDO guidelines and design, has placed BDO centre stage as a neoliberal conservation technology with the potential to stimulate 'green growth' on a global scale (see, Carver and Sullivan, 2017; Seagle, 2012; Sullivan, 2013a; Benabou, 2014; Sullivan and Hannis, 2015, 2017), even though it has proven hard in practice to legislate for BDO policy at national and regional levels of government (see Brock, 2018; Carver, 2017; Carver and Sullivan, 2017, 2018; Lockhart and Rea, 2019).

Although BDO should adhere clearly to the 'mitigation hierarchy' (working through a stepped strategy of avoid-minimise-restore, with 'offsetting' as the last resort for mitigating residual harm), the logic of offsetting has been observed to perversely boost development-related environmental damage and the creation of scarcity in indicators of environmental health (Apostopoulos and Adams, 2017; Dunlap and Fairhead, 2014; Sullivan, 2012; Sullivan and Hannis, 2017). BDO provision in specific planning cases in England made previously impermissible development permissible (Sullivan and Hannis, 2017), not least by providing numerical representations of habitats that are then negotiated downwards to reach cost levels acceptable to developers seeking to destroy habitats (as detailed in Carver and Sullivan, 2017, 2018; Sullivan, 2013b). In Germany, Brock (2018) and Brock and Dunlap (2018) show how the increasingly 'flexibilised' provision of habitat compensation payments emerging in connection with the EU NNLi becomes part of strategies for legitimizing and extending coal mining at Europe's 'largest hole', the coal mine in the Hambach forest operated by German electric utilities company RWE (Rheinisch-Westfälisches Elektrizitätswerk). Seagle (2012) and Kill and Franchi (2016) demonstrate that Free Prior and Informed Consent (FPIC) procedures for biodiversity offsetting proposals in developing country contexts may be less than perfect, leading to both

displacement and loss of access to important resources. Sullivan (2013b: 87) has shown that even areas under national park protection may be mined if considered strategically important by governments, with offsetting mobilized (rhetorically at least) to make extraction 'green', even when the mineral concerned is uranium with all the present, future and carbon-intensive damage this implies (Barnum, 2015; Churchill, 2003; Jensen, 2006; Sovacool, 2008).

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Having reviewed and distilled these recent debates, we now highlight what we see as an emerging fautline in scholarship regarding the value of neoliberal approaches to environmental governance. In particular, we consider that arguments for differences between these modes of governance, as well as for the departure of specific cases from an idealised version of neoliberalism (as somehow disconnected from state governance technologies), may obscure consideration of the broader structural and structuring dimensions of neoliberal environmental governance technologies. We engage specifically in this section with three structural dimensions we suggest could be taken more into account in analyses of neoliberal environmental governance.

4. A productive faultine?

James Ferguson (2010) has commented that 'uses of neoliberalism' in so-called 'progressive scholarship' to critique the consolidated inequities produced by capitalism can produce something of a knee-jerk reaction against any initiative that contains neoliberal elements, even while that initiative might manifest progressive outcomes in some terms and at some scales. The situation is complex, and the structuring implications of neoliberal policies clearly are varied and hybrid. The debates we distil above clarify as much. They point towards a faultline between scholars critiquing as well as implicitly accepting neoliberal environmental governance approaches, and others who more clearly reject the assimilation of ecosystems into the structuring grid of neoliberal governance.

We acknowledge Lave's (2018: 55) observation that '[b]y continuing to heap academic attention to these relatively empty forms of market-based environmental management, we promote and legitimize these institutions we critique' (also Van Hecken et al., 2018). Nonetheless, we remain

concerned to draw attention to how elaboration of the (superficial) diversity of uptake in neoliberal environmental governance may become collusion with the state-corporate expansion and territorialization effected more broadly by neoliberal governance regimes. In particular, analyses arguing that such governance approaches are not neoliberal because they do not occur within a genuinely unconstrained market, or because they are not somehow pursued purely by private sector actors without state involvement (cf. Lockhart and Rea, 2019; McElwee et al., 2014) betray a strange benchmark for neoliberalism: as we have traced in Section 2, neoliberal governance is precisely concerned with multiplicitous state involvements in the shifting of public asset ownership and management to the private sector.

Taking 'south-north' geographies, histories and inequalities more fully into account leads us towards even greater concern with a normalization of neoliberal environmental governance approaches. Take, for example, the statement by Van Hecken et al. (2018: 316), that PES is 'a "useful surface of engagement"' for 'a new form of relationship for garnering recognition from the state and urban Mexico of the value of rural environmental stewardship and, concurrently, of maintaining indigenous and *campesino* communities on their lands'. To us, a statement like this can perform an underhanded colonial apologetic, allowing agency to function and thrive only as long as it is subsumed by the grid of (neoliberal) state-corporate interests, whilst simultaneously neglecting the legacy of past and present political struggles over land and autonomy (Dunlap, 2018b; Stephen, 2002; Tutino, 1988). We also wonder if encouragement to place 'greater attention on entangled social-ecological contexts and the adaptations they engender' in the name of 'feminist and poststructuralist scholars' work on decolonized epistemologies' (Van Hecken et al., 2018: 315) may obscure fierce critiques of capitalist structuring by both feminist and post-structuralist philosophers (as examples, see Deleuze and Guattari, 1987[1980]; Federici, 2004; Merchant, 1983; Plumwood, 1993; Shiva, 2002[1989]). Our concern here is to draw attention to a possible normalizing of past primitive accumulations which may accompany the depoliticized and hybridized *acceptance* of market-oriented environmental interventions. Celebrations of agency and adaptation to current neoliberal environmental governance policies can thereby mask the monstrous historical 'leviathan' of colonial conquest and technologies of political control (Federici, 2004; Sullivan, 2017a, 2019a; Taussig, 2010[1980]; 1987). As Fletcher and Büscher (2019: 423), following Springer (2014) argue, Van Hecken et al. (2018) seem to be flirting with a

'neoliberalism in denial', by abandoning the 'vigilance needed to combat the pernicious diffusion of neoliberal ways of thinking and being'.

Alternative analyses demonstrate that outcomes of neoliberal environmental governance initiatives are often precarious. Jobs are temporary, part-time and deliver only a portion of the imagined expectations raised in neoliberal environmental governance proposals (Aguilar-Støen, 2015; Duffy, 2002; Fletcher and Neves, 2012; Fletcher et al., 2016, 2017; Holmes, 2014; Igoe, 2010; Roth and Dressler, 2012). Social development projects are limited and/or tokenistic in relation to broader societal transformation (Benjaminsen and Bryceson, 2012; Cavanagh and Benjaminsen, 2014; Holmes, 2007, 2014; Marijnen and Verweijen, 2016; Matulis, 2015; Rotz, 2014; Seagle, 2012; West et al., 2006). Collective benefits tend to transform into exacerbation of income-inequality, related to elite capture of benefits, clientelism and the way companies approach local 'leaders' and/or 'political authorities' (Aguilar-Støen, 2015; Benjaminsen and Bryceson, 2012; Duffy, 2002; Hunsberger et al., 2017; Osborne, 2013; Sullivan 2002, 2003).

To complete this section, we trace three dimensions of the structuring processes we see as essential to neoliberal environmental governance technologies, begging a deeper deconstructive critique in response. We see these dimensions as forms of 'social engineering', defined as concerted efforts – intentional or unintentional – by actors within various levels of bureaucratic management to 'persuade', construct or manipulate populations and landscapes in the service of a desired governance agenda or economic initiative (Brock and Dunlap, 2018; Dunlap, 2019). Specifically we observe, first, that neoliberal environmental governance can be both dependent on existing poverty and marginalization, and beneficial for the opening of new environmental markets, thereby providing two sides of a territorializing impetus for 'poverty-pushed market-based environmentalism'. Secondly, that an intrinsic and paradoxical aspect of neoliberal environmental governance initiatives is the fabrication of new commodities, and thus consumptive desires – with material/environmental effects. Thirdly, we notice that systemic political conquest and violence (past and present) is frequently required to maintain and bring PES, REDD+ and offsetting projects into existence, echoing the observation by Patrick Wolfe (Wolfe, 2006: 388) that 'invasion is a structure not an event'. We briefly elaborate these observations below.

Poverty-pushed market-based environmentalism

Market-based environmentalism and microfinance constitute significant approaches to neoliberal rural development, attempting to enroll peoples of the global south – the so-called 'fortune at the bottom of the pyramid' (Prahalad and Hart, 2002) – further into national and global monetary systems. Demonstrating that microfinance 'is largely antagonistic to sustainable economic and social development', Milford Bateman (2010: 1) reveals how microfinance spreads capitalist values and neoliberal governance technologies in rural and materially poor areas around the world. This is enacted, Bateman (2010: 74) contends, through 'poverty-pushed entrepreneurship' in which impoverished rural communities have little choice but to become indebted in microfinance schemes that frequently result in either 'client exit or failure'. From this perspective, neoliberal environmental governance regimes and associated markets are spreading across new frontiers (Holmes, 2014; Rasmussen and Lund, 2018), accompanied by an implicit deployment of 'poverty-pushed market-based environmentalism' to market these projects. As such, poverty-pushed market-based environmentalism might be usefully conceptualized as localized or small-scale 'disaster capitalism' (Fletcher, 2012; Klein, 2007; Sullivan, 2009), through which dispossession, cultural fragmentation and poverties are mobilised as gateways or opportunities to implement neoliberal expansion in local contexts.

Remembering the debates reviewed in Section 3, contestations and failures are emerging in response to neoliberal environmental governance approaches that appear similar to those identified in critiques of microfinance. People desire social and economic development, but the legacies of primitive accumulation (discussed further in Section 5) leave them vulnerable to neoliberal environmental governance programs which stifle and subvert alternative ecological visions associated with 'environmentalisms of the poor' (Martínez-Alier, 2002; Nixon, 2011). National and international support is directed to commodification, capital expansion and extraction, rather than to non-market-oriented care for (and restoration of) ecosystems and socio-ecological abundance (Collard et al. 2014; Singh, 2015; Sullivan, 2009, 2019b). Meanwhile, public relations and social engineering efforts are 'rolled out', backed by security forces, to open new environmental markets (as discussed above). This powerful trio of material deprivation, marketed developmental desires and 'saving nature' is enrolled into one package to advance

'green capitalism', amidst an instrumentalized reality of poverty and extreme inequality. We think this dimension – the instrumentalization, for commercial gain, of peoples' poverty in neoliberal environmental governance technologies – deserves greater critical attention and research.

Rags to riches: manufacturing desires with new commodity fictions

The manipulation of desires for ecological harmony and climate repair (Igoe, 2010; Fairhead et al., 2012) entails marketing prosperity as integral to the developmental dream (Berman, 1983; Escobar, 2012; Illich, 1970), of which the 'green economy' is the latest expression. There are at least two forces creating desire for commodity fictions characterizing PES, REDD+ and carbon-biodiversity offsetting. First, large amounts of resources are pumped into these projects from governments, international regulators and the private sector. Neoliberal environmental governance schemes become (more-or-less) predesigned packages to create situations that further impose logics of governmental control and economic advancement over human and nonhuman resources (Cavanagh et al., 2015; Dunlap and Fairhead, 2014; Massé and Lunstrum, 2016). As noted below, immense investments in public relations, social science interventions, stakeholder engagements, negotiations with political elites, participatory public meetings and FPIC consultations are involved in the creation of new marketized forms of environmental governance. Second, nature as 'natural capital' is fabricated to complement broader expansionary capitalist processes, enrolling regional and local collaborators (often established elites) to further propagate and institutionalize the green developmental dream, regardless of procedural violations and socio-ecological specificities (Aguilar-Støen, 2017; Duffy, 2002; Robertson, 2011; Rotz, 2014; Sullivan, 2018b). The hopes and desires manufactured by new commodity fictions overlap and are intertwined with other harsh realities, as discussed below.

Effective social control arises further when such disciplining becomes voluntary, intrinsic and self-led (Dunlap, 2018c; Foucault, 1995[1977]), such that values, lifestyles and ideologies associated with the 'dream of development' (Escobar, 2012[1995]: xlv) are internalized (see Berman, 1983; Rahnema, 1997). The consumptive desires which condition and manufacture particular subjectivities thereby appear to emerge from within the self – naturalized as intrinsic rather than externally driven. Dominant actors cannot force an agenda, they have to inspire one:

i.e. if '[b]eating an enemy involves not so much capturing *as captivating them*' (Virilio, 1995: 14, emphasis added), it seems imperative to resituate agency within neoliberal environmental governance regimes as tautologically tethered to the net of consumptive desires incentivized by these regimes. Our argument, then, is that scholarship engaging with neoliberal environmental governance could be more critical towards these forms of social engineering that manage agency to fit with an emerging, and increasingly naturalized, ecologically extractive and economically unequal 'green capitalism'.

'Invasion is a Structure not an Event'

In asserting that 'invasion is a structure not an event', Wolfe (2006: 388) emphasized that systemic political conquest and violence, both past and present, is required for continued strategies and techniques of alienation, and the corresponding sustenance of accumulation possibilities. This view draws attention to the enactments of slavery, patriarchy/misogyny, genocide and ecocide underscoring the primitive accumulations through which resource control and industrialization have been and are achieved (cf. Banerjee, 2008; Federici, 2004). Wolfe's insight is perhaps more applicable to the ways in which PES, REDD+ and offsetting projects are brought into existence than many analyses acknowledge.

Colonial genocide studies tend to see colonial processes as exhibiting three non-deterministic phases (Wolfe, 1999): initial confrontation or invasion – often involving a period of relatively benign coexistence prior to a 'genocidal moment' as colonial settlement demands increase (Moses, 2000); a carceration period involving significant violence, displacement and resettlement; and an assimilation period that aims to integrate and/or proletarianize indigenous populations into the colonial system (Gordon and Sholto Douglas, 2000). Dunlap (2018c) adds a fourth phase, an intensification of assimilation that encourages and/or leads to the self-management of these structures by indigenous and non-indigenous people alike. This analysis of larger trends extends to participatory and FPIC processes that, for example, manage consent and force approval by other means, rather than offering possibilities for saying 'no' (Choudhury and Aga, 2019; Dunlap, 2017b; Leifsen et al., 2017; Wiwo Wewa 1999). Neoliberal environmental governance initiatives in the global south not only build on these contexts of deep structural violence, but can thus extend colonial agendas in strategic, less overt and seemingly non-violent

ways. From this perspective, the same state and economic structures and logics effecting primitive accumulation and colonial control are now advancing ecological conquest through neoliberal environmental governance regimes.

In particular, the threat of violence that may lurk behind neoliberal environmental governance initiatives deserves wider recognition. Rural and other communities are impacted both indirectly by culture industries and/or psychological operations that manufacture consent (Bernays, 1947; Herman and Chomsky, 2010/1989), and directly through police-military confrontation (as documented empirically in Brock and Dunlap, 2018; Cavanagh and Benjaminsen, 2014; Dunlap and Fairhead, 2014; Holmes, 2007; Huff, 2017; Verweijen and Marijnen, 2018). When scholars describe people asserting their 'agency' to 'appropriate' or make use of neoliberal environmental governance schemes, then, what may be unspoken is that this agency is often managed through various and uneven layers of structural and at times overt political violence. The character of structural violence(s) clarifies that 'the hidden fist' can come into play to protect 'the hidden hand' of the market (cf. Friedman, 1999; Perkins, 2016/2004), in neoliberal environmental governance contexts as elsewhere.

PES and other neoliberal technologies of environmental governance can thus be understood as interventions that structure individual/collective agency – through conditioning, disciplining and shaping subjectivities – to obstruct decolonizing and ecologically sustainable alternatives that might foundationally challenge the material and psychological estrangements effected by 'universal alienation' (Harvey, 2018). It is to alienation and its significance in neoliberal environmental governance that we now turn.

5. Accumulation-by-alienation and the structural natures of ecological conquest in neoliberal environmental governance

> As capitalism's ever-intensifying imposition of alienation at all levels makes it increasingly hard for workers to recognize and name their own impoverishment, … revolutionary organization has had to learn that *it can no longer combat alienation by means of alienated forms of struggle* (Debord, 1983/1967: Thesis 122, emphasis in original).

Some fifteen years ago, David Harvey (2004) proposed the term 'accumulation-by-dispossession' to describe a 'new imperialism' wherein crises of overaccumulation are resolved ('fixed') through predatory expansion of features already described in Marx's conception of 'primitive accumulation' (Harvey 2004: 74). In the wake of this reframing of 'primitive accumulation' as 'accumulation-by-dispossession', connections between expansionary processes of capitalist accumulation (Harvey 1975) and geographies of environmental conservation have been repeatedly invoked. Scholars in global south contexts, where multiplicitous local displacements associated with high value conservation species and landscapes is acute, and where financial returns to conservation tend to be highly unequal and often racialized, have been particularly concerned to draw attention to links between conservation strategies and profit motives.

Bumpus and Liverman (2008) thus write of the capital-accumulation strategies associated with carbon offsets as 'accumulation-by-decarbonisation'. Sullivan (2010, 2013a), after Marx, Federici (2004) and De Angelis (2001), speaks of 'primitive eco-accumulation' in considering processes of new commodity visions and formations involved with environmental payments and exchanges in PES, REDD+ and offsetting. Kelly (2011) emphasizes national park enclosures and conservation policing as at times enabling new layers of private capture and thereby effecting primitive accumulation. Fairhead et al. (2012) introduce the concept of 'green grabbing' to describe processes of land and resource dispossession taking place in the name of an environmental or 'green' agenda (also Dunlap, 2017a). Cavanagh and Benjaminsen (2014: 62) demonstrate the relationships between virtual nature, spectacle and the displacement of small-holder farmers wedded to the land for conservation accumulation strategies, arguing that in combination a 'naturalization by dispossession,' is performed wherein displacement self-fulfills and naturalizes the 'pristine wilderness myth' (see Huff, 2017). Büscher and Fletcher (2015: 274) write of 'accumulation-by-conservation', arguing that this is 'a new "phase" of capitalist accumulation based on a conservation model', complemented by 'accumulation-by-securitization' (Massé and Lunstrum, 2016) whereby the securitization and/or militarization of conservation parks and policing contributes to the accumulation and protection of conservation wealth. Huff and Brock (2017: 4) highlight how large-scale restoration projects and the logic of 'degradation neutrality' are leading to 'accumulation-by-restoration,' wherein market-based

restoration projects create 'a demand for degradation' that operationalizes racial stereotypes to blame materially poor land users, whilst acting as 'the ultimate denial of the negative environmental impacts of the capitalist mode of production' (Büscher and Fletcher, 2015: 292). Bigger and Dempsey (2018) in the inaugural issue of *Environment and Planning E* mention new work proposing that a hierarchical racialization of conservation-related accumulation possibilities enacts an 'accumulation-by-difference-making' (also Harvey, 1996), such that the forging of difference itself is a condition of possibility of (the inequalities infusing) 'the Anthropocene' (Collard and Dempsey, 2018).

Echoing and adding to this published proliferation of 'accumulation-by-X' conceptions of processes of enclosure in neoliberal environmental governance technologies, we wish to re-emphasise the multiplicitous concept of *alienation* running through ecologically and socially destructive processes of capital accumulation (see also Harvey, 2018; Holloway, 2015; Taussig, 2010[1980]). The concept of alienation was at the heart of Marx's analysis of capital accumulation and his deployment of the concept affirms the productive ambiguity running through the term (Harvey, 2018: 139). 'Primitive accumulation' in *Capital* volume 1 described the foundational processes of material alienation – of people from land and the products of their activities, as well as of abstracted and saleable labour – required for subsequent performances of commodification, exchange and the accumulation of value (Marx 1974[1867]; also Federici, 2004). Previously in the *Grundrisse*, Marx also affirmed that as the 'living labour capacities' of human and beyond-human bodies become alienated in the commodity form, their alienation is further increased or 'developed', such that an amplified '*indifference of consumers and producers to one another*' is an 'alienation' developed in paradoxical correspondence with an increased 'all-round interdependence in production and consumption' (Marx 1993[[1857–1858]]: 161, emphasis added). Here 'commerce and production', represented by 'lists of current prices', were identified by Marx to be 'the best proof' by which individuals are confronted with 'their own exchange and their own production' alienated as 'an *objective* relation which is *independent* of them', thereby fostering relations of '*[c]omparison* in place of real communality and generality' (Marx (1993[[1857–58]]: 161, emphasis in original).

Alienation is thus iteratively present in Marx both as the rupture of prior socio-ecological relationships enacted through processes of primitive accumulation, and as a psycho-social state of indifference continuously amplified by commodified forms of production and exchange. For Marx, then, and as highlighted in Sullivan (2017b), alienation is present as human psychosocial and ecosocial relationships, otherwise in a 'movement of becoming' (Marx, 1993: 488), are abstracted through the commodification of labour (see discussion in Harvey, 1996: 126, 198); whilst also being at the heart of how organic and nonorganic 'things' are ripped from their relational contexts as they are manufactured, conceptually and materially, either as variously commoditized 'labour' (cf. 'ecosystem services'), or as marketed commodities whose trading may generate surplus value that can be captured (Robertson, 2011). In combination, the transformation of land, natures and human activity from subject to object permitting their reification as marketable commodities is a process that disregards and makes strange the myriad other practices of relationship, value and ethical requirements enacted by people in relation to both each other and to natures-beyond-the-human (Sullivan, 2013a: 210).

The term 'alienation' also seems to have become more, rather than less, significant in the work of David Harvey. The term itself does not feature in either his early work on the spatial dimensions of capitalist expansion (e.g. Harvey, 1975), or his influential paper on 'accumulation by dispossession' (Harvey, 2004). In *Justice, Nature and the Geography of Difference*, however, Harvey (1996: 126, 198) invokes the term 'alienation' in reference to 'Marx's politics of self-realization', describing the latter as resting 'strongly on the recapture of an unalienated relationship not only to fellow human beings but also to that creative and sensuous experience of nature which capitalist industry has rendered so distant and opaque'. More recently, Harvey (2018: 137, 142) analyses an intensifying 'universal alienation' associated in part with 'the deteriorating relation to nature' as at the heart of contemporary political instability and the rise of populist and authoritarian politics: thus, 'Trump is the President of alienation, produced by alienation'. As noted above, he considers that 'subjectivist humanist' and 'objective historical materialist' dimensions of the term are increasingly and iteratively connected and consequential, requiring understanding and confrontation as such (Harvey, 2018: 137, 140).

These different emphases in Harvey's work again point towards the varied dimensions of meaning inherent in the term 'alienation', which we are keen to emphasize here. As Jaeggi (2014) reviews, they also pull us towards the deeper trajectory in humanist thought that influenced Marx, deriving from Rousseau's *Discourse on Inequality* and later developed by scholars such as Erich Fromm (1978) as well as Frankfurt School theorists such as Adorno and Horkheimer (1997[1944]). In the 20th century, the concept of alienation took on distinctive, yet evolving and complementary meanings replete with mutually supportive Marxian and psychological, as well as anti-psychiatry, analysis (Deleuze and Guattari, 1987[1980]; Jaeggi, 2014; also Laing, 1967). Following Jaeggi (2014: 5), then, we emphasise alienation as evoking a deficient relation one has to oneself, to the world, and to others, characterized (as Marx observed) by indifference, instrumentalization, reification/fetishism, absurdity, artificiality, isolation, dissociation, disconnection, meaninglessness and impotence. Or, put simply, a *relational deficiency*.

Whilst 'accumulation-by-alienation' might retain a multiplicity of meanings, we find the specific concept *relational deficiency* potent for understanding the fragmentation, atomisation and narcissistic individualism that many commentators understand to be sovereign in the neoliberal era (Harvey, 2018; Hedges, 2010; Houllebecq, 2001). Psychologist Bruce Alexander (2008: 61) reminds us that '[a]long with its dazzling benefits, the global movement towards free-market society has costs, one of which is the destruction of psychosocial integration'. *Eco*psychology, together with ecophilosophy and phenomenology approaches to human experience, specifies that psychological disintegration arising in connection with the commodity form is also *ecological* in nature (see, Evernden, 1985; Roszak, 2002). Psychological *integration* thereby implies recognition of the virtues of *ecological dependence* (Hannis, 2016) to extend human relational and reciprocal practices to include natures-beyond-the-human (Hannis and Sullivan, 2018).

The entanglement of alienation with commodification, as well as with the objectifications and quantifications on which commodification rests, thereby for us makes objectification, measurement and commodification strange tools with which to counter socio-ecological breakdown caused by alienation in its multiple dimensions. In invoking 'accumulation-by-alienation' as at the heart of neoliberal environmental governance approaches and primitive accumulation / accumulation-by-dispossession, we are thus drawing attention to the ways that the

metrics and commodity fetishisms built into PES, REDD+ and offsetting (Turnhout et al., 2014; McElwee, 2017; Sullivan and Hannis, 2017) can further naturalize habits, attitudes and perspectives that alienate people from natures-beyond-the-human, as well as from each other. This recognition that a practice of *splitting* so as to create and release value is central to capitalist enterprise (cf. Robertson, 2011), takes us to the reasons why PES, REDD+ and offsetting are contentious and paradoxical as methods for healing the socio-ecological alienations and disintegrations generated by this enterprise. This same recognition also brings us to the reasons why these alienated responses are so core to technologies of environmental governance conceived in terms of maintaining, rather than resisting, the momentum of state territorialization and capital accumulation defining mercantile expansion and capture, from the 1400s to today.

6. Conclusion

As scholars we are, of course, also enmeshed in the alienations we invoke above, particularly given the industrialized environments in which we work (Freund and Martin, 2007; O'Neill, 2012), the social and infrastructural conditioning of subjectivities from which academics are not immune (Augé, 2008[1995]; Dalakoglou and Harvey, 2012; Foucault, 2007, 2008; Gabrys, 2014; Harvey et al., 2017), and the relentless neoliberal restructuring pressuring academic labour and engagement (Lave, 2012). In understanding and analyzing the extension of industrial economy through neoliberal governance mechanisms such as PES, REDD+ and offsetting, we thus also need to understand the effects of the alienating structures of production we inhabit on our own patterns of thinking and engagement with research contexts. In this paper we have provided a brief review of recent debates regarding PES, REDD+ and carbon-biodiversity offsetting as forms of neoliberal environmental governance, highlighting superficial differences and structural similarities between these governance technologies. With Harvey (2018) we want to go further, however, in stressing that at the core of ecological and climate crisis is a profound alienation and splitting from eco-social relational contexts, and that it is this disconnection that underlies the variable abstraction of economic value from ecosystems. As noted above, therefore, we find PES, REDD+ and offsetting technologies to be strange tools for countering socio-ecological breakdown. This is because these technologies similarly abstract and extract value from

ecosystems, and thereby deepen – rather than refract – the alienations underpinning this breakdown.

The implications, we think, are twofold. First, as researchers and practitioners both within and beyond academia we need to consider the ways we are deeply influenced by industrial capitalism, especially as this relate to our own desires – or 'ghosts of desire' following William Blake (1994[1790-93]) – in relation to visions of socio-ecological health (also Burman, 2017; Nirmal and Rocheleau, 2019; Sullivan, 2017c, 2019b). Secondly, we maintain that PES, REDD+ and offsetting scholars might more openly reject these governance technologies, rather than trying to improve them. Other avenues exist for research that observe, participate in and actively develop alternatives to state sanctioned market-based conservation. These might include turning 'ecosystem services' and 'natural capital' conceptualisations, objectifications and instrumentalisations on their heads: for example, through ideas and practices of 'serving nature' (Sullivan, 2009); 'living with' diverse natures (Turnhout et al., 2013) as multi- and inter-species assemblages (Dransart et al., 2013); 'convivial conservation' (Büscher, 2014); and conscious strategies towards economic 'de-growth' (D'Ailsa et al., 2014; Escobar 2015; Kallis, 2018; Nirmal and Rocheleau, 2019). Consolidating struggles 'in the field of realisation rather than production', as Harvey (2018: 146) puts it. Such approaches might require desisting from measuring and making legible 'ecosystem services' so as to gain more reliable data to perfect ecosystem marketization, compensation reward schemes and the like; and thus refusing to be accomplices to neoliberal environmental governance as an extension of historically rooted ecological conquest. Our closing invocation, then, is for solidarity in pushing back against 'capitalist valuation', through combining our own alienated labours towards deeper contestation of the alienating accumulation structures effected through neoliberal environmental governance.

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