Relational environmental governance: A critical framework for praxis with the material world

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Abstract

Environmental governance (EG) has become a hegemonic concept for understanding and transforming environmental decision-making processes that operate beyond the state. However, political ecologists, drawing from a diverse set of theoretical frameworks, have critiqued the concept for being malleable, vague, and apolitical, which has enabled its appropriation in ways that conceal inequality and difference, advocate techno-managerial fixes, and espouse neoliberal solutions. Political ecologists have approached EG more critically with the conceptual tools of neoliberal natures, environmental regulation, and eco-governmentality. In this article, we contend that these conceptualizations, while theoretically rich, are limited in their capacity to capture a diversity of governance contexts, processes, and actors and to drive both scholarly analysis *and* radical change. Thus, we put forward a conceptual framework of relational environmental governance (REG) that captures the dynamic and unequal interactions among heterogeneous human and non-human actors by which socio-ecological arrangements are structured, controlled, and transformed. Drawing from a variety of relational traditions, the framework comprises four key "moves" related to i) ontological understandings of EG processes as full of unequal power relations and heterogeneous actors, ii) epistemological privileging of intersections among racialized, gendered, queer and/or alternative or Indigenous knowledges in EG processes, iii) methodological emphasis on conducting research relationally with diverse EG actors, and iv) a praxis of engagement with EG processes to change how socio-ecologies are controlled and address crises of sustainability.

Keywords: Political ecology, environmental governance, human geography, relationality, praxis

Résumé

La gouvernance environnementale est devenue un concept hégémonique pour comprendre et transformer les processus de prise de décision en matière d'environnement qui opèrent au-delà de l'État. Cependant, les écologistes politiques, s'appuyant sur un ensemble varié de cadres théoriques, ont critiqué le concept pour sa malléabilité, son imprécision et son apolitisme. Il a été approprié de manière à dissimuler les inégalités et les différences, à préconiser des solutions techno-managériales et à épouser les solutions néolibérales. Les écologistes politiques ont abordé la gouvernance environnementale de manière plus critique avec les outils conceptuels des natures néolibérales, de la réglementation environnementale et de l'éco-gouvernementalité. Dans cet article, nous soutenons que ces conceptualisations, bien que riches sur le plan théorique, sont limitées dans leur capacité à saisir la diversité des contextes, des processus et des acteurs de la gouvernance et à soutenir l'analyse scientifique et le changement social radical. Nous présentons un cadre conceptuel de la gouvernance environnementale relationnelle (REG en anglais) qui saisit les interactions dynamiques et inégales entre des acteurs humains et non humains hétérogènes par lesquelles les arrangements socio-écologiques sont structurés, contrôlés et transformés. S'inspirant d'une variété de traditions, le cadre comprend quatre "mouvements" clés liés à i) la compréhension ontologique de la gouvernance environnementale avec ses relations de pouvoir inégales et ses acteurs hétérogènes, ii) le privilège épistémologique des intersections entre les savoirs racialisés, genrés, queer et/ou alternatifs ou indigènes, iii) l'accent méthodologique sur la conductivité et l'efficacité de la gouvernance environnementale relationnelle, et iv) l'engagement pratique dans les processus de gouvernance environnementale pour changer la manière dont les socio-écologies sont contrôlées et dont elles abordent les crises de durabilité.

Mots-clés: Écologie politique, gouvernance environnementale, géographie humaine, relationnalité, praxis

Resumen

La gobernanza ambiental (GA) es un concepto hegemónico para entender y transformar los procesos de toma de decisiones ambientales que operan más allá del Estado. Sin embargo, los ecologistas políticos han criticado el concepto por ser maleable, vago y apolítico. Afirman que propugna soluciones neoliberales y oculta la desigualdad y la diferencia al tiempo que da prioridad a las soluciones tecnoadministrativas. Los ecologistas políticos hablan de naturalezas neoliberales, regulación medioambiental y ecogubernamentalidad. Desarrollamos un marco conceptual de gobernanza medioambiental relacional (REG) para captar las interacciones dinámicas y desiguales entre actores humanos y no humanos que estructuran, controlan y

transforman los acuerdos socioecológicos. El marco comprende cuatro "movimientos" clave relacionados con i) la comprensión ontológica de los procesos de gobernanza ambiental como relaciones de poder desiguales y actores heterogéneos, ii) el privilegio epistemológico en la gobernanza ambiental de los conocimientos alternativos o indígenas, ya sean raciales, de género o queer, iii) un énfasis metodológico en la realización de investigaciones relacionales con diversos actores de la gobernanza ambiental, y iv) una praxis de compromiso para abordar las crisis de sostenibilidad y el control de las socioecologías.

Palabras clave: Ecología política, gobernanza ambiental, geografía humana, relacionalidad, praxis

1. Introduction

Global environmental degradation, ecological catastrophe, and deep socio-environmental injustices have prompted scholars to question the failures pushing the world to a breaking point. International climate accords such as the Paris Agreement have failed to prevent global carbon dioxide emissions from rising (Jackson *et al.*, 2019). Exacerbated by climate change across multiple contexts, hot and dry weather has repeatedly sparked wildfires across the globe, such as in the Western United States (Fountain, 2021) while extreme weather has led to massive flooding across many countries, including Pakistan (Baloch, 2022). The weakening of Indigenous territorial rights and expansion of the agro-industrial frontier in Brazil has driven deforestation and fires over the last few decades (Sims, 2019). Thus, the unsustainability of many societal relationships with nature has been laid bare as failures of humankind as a species, cultural systems to adapt to change, and capitalism as a "way of organizing nature" (Moore, 2015, p. 14). Such crises can also be viewed as failures of environmental governance as human societies have been unable to transform how social-ecological relationships are organized, controlled, and managed.

Environmental governance (EG) has proved a popular concept within the environmental social sciences since the 1990s due to its perceived potential to improve the sustainability of human-environment relations. It draws its strength from involving a broader range of actors in decision-making processes, in which govern*ance* goes beyond a singular focus on govern*ment* (Painter, 2000; Lemos & Agrawal, 2006). There has long been a growing role of non-state actors, such as corporations, international development agencies, social movements, communities, non-governmental organizations (NGOs), and philanthropies in environmental decision-making due to transformations driven by neoliberal globalization and civil society reactions to it (McCarthy & Prudham, 2004; Himley, 2008). Thus, EG has been defined by Bridge and Perreault (2009, p. 486) as the "institutional (re-) alignments of state, capital and civil society actors in relation to the management of environments and resources, and the implications of these configurations for social and environmental outcomes."

However, political ecologists have critiqued the concept of EG for being malleable, vague, and elusive – characteristics that enable its appropriation for instrumentalist and managerial ends (Corson, 2010). EG is rooted in diverse conceptual approaches and thus holds varying and contradictory ideological and political positions (Bridge & Perreault, 2009), facilitating its appeal to different groups. It can act as an empty signifier, or a concept without a concrete referent that can be infused with a variety of different meanings (Offe, 2009), as with concepts such as "sustainability" (Brown, 2016) or "social capital" (Radcliffe, 2004). More importantly, its mainstream conceptualization and use is often deeply *apolitical*. Thus, critical scholars have argued that EG conceals inequality and difference, maintains a techno-managerial stance, and espouses a neoliberal reliance upon market rule.

In this article, we align ourselves with these critiques but aim to move beyond them to address whether and how EG can be developed into a more encompassing and critical concept for both scholarly analysis *and* radical change. Political ecologists have theorized EG with a variety of frameworks, including neoliberal natures, environmental regulation, and eco-governmentality. While these approaches offer theoretical richness, their capacity to capture a diversity of governance contexts, processes, and actors can be limited. Additionally, an overemphasis on critique has limited EG's potential as a framework to conceptualize, inspire, and advance socio-ecologically just change.

Responding to these shortcomings, we advance a critical theoretical framework of EG that links various approaches and clarifies use of the term. Doing so provides a broadened and multifaceted theoretical foundation

for analyzing environmental power relationships in ways that avoid apolitical analysis while pursuing avenues for just environmental change. We contend that the way forward is to explicitly theorize an inherent strength of governance thinking, but which has hitherto only been implicit: its relationality. Thus, we define relational environmental governance, hereafter abbreviated as REG, as the dynamic and unequal interactions among heterogeneous human and non-human actors by which socio-ecological arrangements are structured, controlled, and transformed. Unequal relations are inherent to REG and are conditioned by emerging, intersectional identities of various actors and their histories in addition to the politically active capacities of biophysical and multispecies actors. REG is dedicated to forms of praxis that unify critical thought and practical action to pursue socio-ecologically just transformations.

The various approaches in our framework are placed in conversation and do not necessarily fit comfortably with one another as they are mediated by their own power relations. We recognize there are tensions and differences between them but also similarities and points of overlap that are worth exploring. By putting forth a REG approach, it is our intention to initiate a discussion on the relationalities of environmental governance, in its possibilities as well as limitations, that can be an important starting point for transformational human-environmental research and action moving forward.

In section 2, we review how political ecologists have engaged with EG scholarship and the analytical limitations of such work. Section 3 forensically parses four useful relational ontologies related to political ecology, human geography, and allied disciplines and interdisciplinary fields. We reveal existing tensions and intersections within and among the ontologies with the intention of forging pathways forward for a re-invigorated EG framework. In section 4, we use insights from these relational traditions to develop four "moves" essential to a REG framework, providing examples of how they can be mobilized and identifying areas where their potential has yet to be realized. The conclusion reflects on what a REG approach means as a form of praxis in and beyond political ecology.

2.   Critical approaches to environmental governance

EG has become a prominent concept across geography, anthropology, environmental sociology, political science, development studies, and other disciplines, mobilized in diverse ways to reflect the heterogeneity of various theoretical and conceptual commitments. This has produced a degree of conceptual incoherence regarding the use of the term, as noted by Bridge and Perreault (2009). This section reviews different approaches to the term, with a particular focus on critical perspectives in political ecology, highlighting their insights but also their limitations for generating an EG approach that is analytically powerful and socially transformative.

Oftentimes, EG is approached in human-environment studies with a relatively light touch, where it is a thematic focus of the scholarship, but its meanings are not substantively explored and explained. Some articles include EG in the title but do not explicitly define it, thus leaving the concept to the background (e.g. McCarthy, 2004; Cohen & Bakker, 2014; Dunlap & Sullivan, 2020; Taber, 2017). In such work, its meaning is open to interpretation and assumptions, although the implied focus is on analyzing the role of actors beyond the state that are involved in decision-making processes (Reed & Bruyneel, 2010; Plummer *et al.*, 2013) or the rescaling of institutional authority (e.g. Görg, 2007; Newig & Moss, 2017).

In other work, the concept of EG is clearly defined, but it is approached uncritically and apolitically. The transition from government to governance is viewed as a flattening, decentralization, or democratization of power relations, a move away from top-down hierarchical management and control of the environment by the state to more horizontal and networked forms of multi-actor processes that include a diverse set of market and civil society actors (e.g. Bulkeley, 2005; Armitage *et al.*, 2012). As with Lemos and Agrawal's (2006) influential approach to EG, such a conceptualization tends to uncritically view the interactions and relations between state, market, and civil society actors as progressive. Furthermore, this body of work reproduces a problematic focus on governance as comprising formal, mechanistic elements, especially the role of regulations, codified institutions, and decision-making processes (e.g. UNEP, 2009; Evans, 2012).

Political ecologists have critiqued such approaches, showing how their view of governance as an idea, arrangement, and practice glosses over and conceals difference by presenting all involved actors as equal

"partners" or "stakeholders" (Bridge & Perreault, 2009; Sultana, 2009; Cheyns, 2014; Ponte, 2014; O'Reilly & Dhanju, 2014). They have emphasized both analytical (see Morales-Giner *et al*., 2023) and prescriptive aspects of EG and have shown how such arrangements tend to "render technical" (Li, 2007) the causes of environmental crises, thus depoliticizing underlying problems (Brown & Getz, 2008; Ponte, 2014; Rice, 2014; Lebaron & Lister, 2015; Marin-Burgos *et al*., 2015; Lebaron *et al*., 2017; Johnson, 2019; Lyall & Havice, 2019). Additionally, political ecologists have critiqued the neoliberal characteristics of much EG thinking and practice, arguing that a shift in decision-making and rule away from the state toward the market has marshalled market principles to solve and manage environmental problems, often exacerbating them (Bakker, 2002; McCarthy & Prudham, 2004; Mansfield, 2004; Robertson, 2004; Swyngedouw, 2005; Castree 2008; Himley, 2008; Dressler & Roth, 2011; Osborne, 2015).

Building upon these critiques, political ecologists have offered three prominent conceptual framings related to EG: neoliberal natures, environmental regulation, and eco-governmentality. The first is concerned with the neoliberal, market-based governance of the environment (Bakker, 2002; McCarthy, 2004; Robertson, 2004; Heynen & Robbins, 2005; Swyngedouw, 2005), which Himley (2008) notes, is likely due to decades of neoliberal reforms in many locales. Much of this work has approached EG as an object of critique and thus has focused on the problems inherent in real-world EG arrangements, ideologies, projects, and practices. This body of work, however, focuses more on its conceptualization of neoliberalism than governance. It focuses on issues such as privatization and enclosure, the rescaling of EG functions, and the role of social movements in contesting the neoliberalization of EG (Himley, 2008). The governance element mostly addresses how environmental decision-making is increasingly dominated by private actors and market processes.

In the second framing, the governance side has been more substantively analyzed with theories borrowed from institutional approaches in economic geography, such as regulation theory. Environmental regulation theory analyzes changing institutional alignments of control and authority over the environment. Studies have examined how institutions, as part of the social mode of regulation, can stabilize a regime of accumulation built upon natural resource extraction (Bridge & McManus, 2000; Gibbs & Jonas, 2000; Bridge & Jonas, 2002). Neoliberal EG has addressed how neoliberal reforms have restructured these institutional alignments, removing power from traditional state authorities and placing it in the hands of market actors, but also creating openings for the voices of civil society, social movements, and various publics (Bakker, 2002; Mansfield, 2004; McCarthy, 2004; Robertson, 2004; Himley, 2008).

Finally, the concept of eco-governmentality has been an important part of geographers' work on EG, which is used to examine how nature, humans, and things become aligned to enable their "correct" administration through technologies of rule. Of interest is how technologies of power intersect with embodied practices to produce individual and collective environmental subjects with "caring" commitments (Agrawal, 2005; Jepson *et al*., 2012; Singh, 2013; Ward, 2013). In other words, eco-governmentality is concerned with how power operates through environmental rationalities. Eco-governmentality is a type of power that operates in a decentralized manner, inducing subjects to willingly change their environmental practices rather than disciplining them to do so in a top-down manner (Valdivia, 2015). Political ecologists have particularly focused on the "truths" that are produced about the environment and its proper management and how subjects are formed in relation to environmental knowledge.

Critiques of apolitical EG arrangements and the three conceptual approaches that political ecology offers have made important advances in EG scholarship. In the spirit of contributing to this work, we identify three limitations in the literature that can be addressed via an explicitly relational approach to EG. First, EG work is constrained by the conceptual underpinnings of formal institutional (see Lemos & Agrawal, 2006) and political economy (see Bakker, 2002; McCarthy 2004; Himley, 2008) approaches. Meanwhile, eco-governmentality contributes a focus on post-structural analyses of knowledge production and subject formation. While these are vitally important in any analysis of EG arrangements, functions, and practices, they are not sufficient for covering the wide variety of political, social-cultural, and biophysical processes at work in governance processes. Without moving beyond formal and rigid institutional accounts of governance, a critical approach to EG is unable to escape mainstream governance approaches that are focused on formal rules, structures, and mechanisms. Additionally, while environmental knowledge production is critically important

for understanding how environments are governed, it is not sufficient for fully understanding how unequal governing relations are constituted.

Second, relationality is present in political ecological scholarship on EG, but remains implicit and untheorized. Governance thinking is inherently relational in its move beyond govern*ment*, highlighting the triadic institutional relationships among state, community, and market actors (neoliberal natures and environmental regulation) or the relationship between governing regimes and governed subjects (eco-governmentality). However, there is limited theorization of the qualities and dynamics of such relationships, or which relationships are hidden or excluded from this triad (Kenney-Lazar, 2018). Furthermore, analyses tend to exclude a focus on relationships that actors within formal institutions may have with those not enrolled in them. For example, when cocoa farmers are incorporated into agricultural sustainability initiatives as "stakeholders," their lack of equal power or ability to voice their concerns in such contexts is not only driven by unequal modes of participation, but also unequal class, gendered, and racialized interactions between them and other members, or external actors such as illicit traders (Orozco-Aguilar *et al.*, 2021).

Third, critical EG approaches have largely focused on critiquing governance arrangements rather than making arguments for how they could be transformed in socially and environmentally just ways. A singular focus on critique leaves questions concerning how scholars should critically engage with and mobilize the concept of EG, for example, in policy realms, to advance processes of social-environmental change (Bebbington, 2015; McCusker, 2015). Although EG is often mobilized as a techno-managerial and neoliberal concept, a key argument of this article is that it does not necessarily have to be so and can be used to both analyze and meaningfully change the world in equitable and just ways.

3.   Mobilizing relational ontologies

Given the above limits of critical approaches to EG, we develop the concept of relational environmental governance (REG) in this section by outlining various pluralistic traditions of relational thinking. In particular, we draw from human geography, political ecology and cognate disciplinary and interdisciplinary approaches that have developed explicit theorization on relational approaches to space and place, intersectional and decolonial theorizations of relationality, posthuman and material relationality, and relations of praxis. We review these modes of relational thought by highlighting their contributions as well as problematizing them and noting their limitations.

Relational space and place

A fundamental source of relational thinking comes from relational analyses of space and place in human geography. This "relational turn," prominent in sub-disciplines like economic geography (Bathelt & Glückler, 2003; Yeung, 2005) and thematic work such as geographical relational poverty studies (Lawson & Elwood, 2014; Elwood *et al.*, 2016), highlights the importance of complex intersections among social actors, institutions, processes, and practices that effect change in society, space, and environment (Yeung, 2005). Its roots lie in geography's move away from mechanistic spatial science and toward Marxist radical political economy in the 1970s and 1980s that emphasized dialectical social relationships as critical to understanding capital accumulation, class struggle, and uneven development across space (Harvey, 1996; Sheppard, 2008; Smith, 2008 [1984]).

Relationality was more explicitly theorized in the 1990s in post-structural human geography, emphasizing how space is not just a "container" but a phenomenon constructed by relational processes (Harvey, 1996; Massey, 2005; Murdoch, 2006). Massey's scholarship has been most instrumental for advancing relational approaches to space, which she views as "the product of the intricacies and complexities, the intertwinings and the non-interlockings, of relations, form the unimaginably cosmic to the intimately tiny" (Massey, 1998, p. 37). These approaches are insightful for theorizing the relational processes at work in EG arrangements, and how they affect socio-environmental change. Massey's (2005) relational approach articulated three key propositions that can be applied to governance thinking. First, space is a product of interrelations between entities rather than a surface upon which processes occur. Second, space is where multiple entities and relations can exist contemporaneously, the sphere of coexisting heterogeneity. Third,

space is always in the process of construction and change – it is open and dynamic. Similarly, EG arrangements can be viewed as sets of contemporaneously coexisting and heterogeneous interrelations between entities involved rather than a concrete set of rigid structures, formal institutions, and rules. Furthermore, they are constantly dynamic and shifting as the social and power relations among involved actors change.

However, a risk of emphasizing relationality is that it can be associated with or used to promote flattened ontologies of power (see Marston *et al.*, 2005; Ash, 2020 and critiques by Leitner & Miller, 2007; Lave, 2015). Doing so would fall into the trap of mainstream governance approaches that view "stakeholders" in governance arrangements as equal participants that can work together to collectively solve environmental problems, ignoring the significant power differentials between them (Sultana, 2009; Cheyns, 2014; Ponte, 2014). Thus, it is important to emphasize unequal and exclusionary power relations in EG. The relationality of Marxist geography is instructive here as it focuses on relations as unequal and dialectical. There can be unequal relations between entities. Additionally, entities that appear irreducible can be comprised of contradictory internal tensions, which are supportive but undermining (Halvorsen, 2017), and their resolution can lead to change. Thus, for example, an NGO involved in an EG process may appear to be comprised of members with similar views, operating in concert to achieve the same goals. However, they may come from different backgrounds with unequal and contradictory class relations, thus leading to tension in their objectives and how they pursue them.

Unequal relations are also critically important in post-structural approaches, as Murdoch (2006) has argued. The relational making of space is both consensual and contested; consensual in that relations can be constructed through agreements or alignments between entities; contested because the construction of relations may exclude some entities or coercively enroll others. Thus, despite the co-existence of multiple relations, some alignments of relations dominate over others, and there is often competition and inequalities between different sets of relations. These sentiments can be applied to EG thinking to focus on how the power relations that comprise EG arrangements are full of inequalities, contestations, and exclusions.

Intersectional and decolonial relational approaches

Relationality has also been central to work on intersectionality and decoloniality in political ecology and related fields. Scholars of Feminist Political Ecology (FPE) have made relational in-roads in theory and practice that are relevant to EG, inspired by theorists of critical race theory, postcolonial and Third World feminism, and Indigenous studies who have long employed an intersectional approach to understanding overlapping forms of oppression (e.g., Crenshaw, 1989; Mohanty, 1991; 1997; Spivak, 1999; Smith, 2013 [1999]). Although relational analyses of space and place examine how social relations are produced through space, feminist political ecologists argue that the same applies to environmental inequalities and differences (Nightingale, 2011). In FPE, emergent identities – gender, race, ethnicity, and sexual orientation and others – intersect in systems of oppression and structure relationships with the environment (Katz, 1994; Hawkins & Ojeda *et al.*, 2011; Mollett & Faria, 2013; Sultana, 2015; Johnston, 2015) with uneven and unjust material effects.

Feminist political ecologists have long advocated multiplicity in identities and knowledges, yet two major limitations can be identified with implications for REG. First, despite theoretical commitments to thinking through multiple intersections of difference, in practice, scholars of FPE have often given primacy to the category of gender (Rocheleau *et al.*, 1996; O'Reilly, 2006; Harris, 2009). Positioning gender as the primary axis of power through which environmental formations are shaped overlooks the multiple social fronts on which environmental oppression occurs. Although Mollett and Faria (2013) have addressed this, arguing that greater emphasis must be placed on race (Sundberg, 2008), tensions remain as a more expansive perspective on the evolving connections between social identity and the environment is needed.

Examining how social facets beyond gender and race shape and are shaped by EG relations sharpens the intersectional toolbox. For example, Goldsmith and Bell (2022) demonstrate how LGBTQ+ populations are commonly excluded from environmental disaster response policies and protocol due to discrimination expressed by cisheteronormative federal, state, and local institutions, ultimately making these communities less likely to disclose their sexuality identities to response authorities. Jampel (2018) reveals how in times of

environmental catastrophes, it is largely ableism embedded in dominant systems and institutions that is responsible for failing disabled people and their families at times of environmental vulnerability and destruction. An effective REG framework must consider the multiple ways in which environmental formations intersect with an ever-expanding spectrum of identities to shape governing relations.

Second, although some FPE academics have joined Indigenous studies scholars to recognize different knowledges and relations of nature and to decolonize EG methods (Rocheleau & Nirmal, 2015; Johnson *et al.* 2021; Sultana, 2021) and ontological approaches (Sundberg, 2014), there is still much work to done. Ontological frameworks in FPE and adjacent fields, while recognizing "different worlds," often draw upon and reinforce western-centric concepts and research designs and fail to recognize or give credit to relational understandings that have been cultivated and practiced by Indigenous peoples for thousands of years (Sundberg, 2014; Todd, 2015; Shultz, 2017; Muller *et al.*, 2019; Paul *et al.*, 2021). Further, FPE has largely failed to gain traction among Indigenous studies scholars due to its perceived rejection of ecofeminism. However, as Rocheleau & Nirmal (2015) point out, the break between FPE and ecofeminism is largely exaggerated with FPE historically affirming the various relationships, knowledges, and connections women have with nature but from a position of poststructuralism and gender difference. Nevertheless, the separation between FPE and ecofeminism has led to a loss of Indigenous representation in FPE.

Emerging efforts to "queer" decolonial FPE offer exciting pathways forward for REG research. A queer lens challenges and resists binary thinking of differences while underscoring the agency and multiplicity of identities in environmental contexts (Nirmal, 2016; Hazard, 2022). A queer feminist framework examines the nexus of multiple oppressions, social difference, *and* liberations in the context of coloniality to see difference not as a deficiency but as a force grounded in affinity and connection. When coupled with decolonization priorities, the resulting framework reveals the colonial roots of many constructed gender/sexual/racial categories which anchor EG projects and makes visible processes of coloniality and modernity that have erased and continue to erase experiences and belief systems of Indigenous peoples and other marginalized populations.

A queer approach has several convergences and divergences with other perspectives presented in this article, namely posthumanism (discussed in the sub-section "Posthuman and material relations") which emphasizes the ontological equivalences and synergies between humans and nonhumans (Badmington, 2000). Both approaches reject binary thinking which is seen as the cause of social and ecological oppression and erasure. Additionally, they move away from humancentric politics and show ambivalence towards the term, "human" in socio-environmental thought. For posthumanists, the term ignores the active capacities of nonhumans in networks in which humans are embedded; for queer theorists, the term has historically excluded queer beings based on their contingent, emerging, and relational identities (Cudworth & Hobden, 2015). Despite these overlaps, a major difference remains. Rather than searching for ontological "sameness" between humans and nonhumans as posthumanism does, a queer feminist framework sees difference as an asset that can unite beings and push for transformation. In this way, queer-informed approaches, with their long history and focus on action, are better equipped to map out and lead emancipatory movements of change (which is a major component of REG). Feminist, decolonial, and queer analyses, when mobilized in a REG framework, shed light on the entanglements of identity and power which both determine access to environmental resources *and* drive efforts of liberation.

Posthuman and material relations

Relational thinking additionally concerns the intersections of human and non-human natures. Political ecologists, as well as critical resource geographers, have elaborated on the complex entanglements of posthuman and biophysical geographies by highlighting how environmental materialities become enrolled in socio-environmental regimes (Busch & Juska, 1997; Bustos, 2015). They have also understood nature as a social product that derives meaning from relations with other actors in combination with biophysical processes in a network of social and ecological associations (Whatmore, 2002; Bakker & Bridge, 2006; Valdivia *et al.*, 2021), extending beyond the historical materialism of earlier Marxist influences. Theories such as actor-network theory (ANT) have helped to advance a relational ontological approach that understands human and non-humans (animals, minerals, diseases, etc.) as constituting one another in and through contingent and

complex social relations. Within these networks of relations, human and non-human actors are imbued with power and have the capacity to act and be acted upon in unpredictable ways (Sundberg, 2011) and form durable expressions of regulatory norms and practices.

Posthuman and biophysical geographies are continually being shaped by relational fields such as animal geographies and more recently, vegetal political ecology by accounting for how animals, plants and humans co-produce spaces, networks, and worlds at multiple scales and linked relations within those worlds (Philo, 1995; Wolch & Emel, 1998; Sundberg, 2011; Durand & Sundberg, 2022). Animalian relational thinking extends beyond simply demonstrating the agency and power of animals, and centers on destabilizing accepted animal-human dualisms while driving in more fluid, complex, and de-centered ways of thinking (Buller, 2014). Vegetal political ecology disturbs the dominance of sentient beings in political ecology (Fleming, 2017) and pushes for consideration of "plantiness" – specific plant traits and biophysical processes (Head *et al.*, 2014) – that intervene in political processes, shape political identities and landscapes, and challenge hierarchical formations. For a REG framework, these threads of thought destabilize anthropomorphized EG structures and usher in alternative collectivities of epistemology, language, and ethics.

Despite the intellectual openings a move beyond human-centered theories and frameworks provides, some authors have cautioned against the universalizing tendencies of posthumanism (Sundberg, 2014) and related multispecies ontologies (Davis *et al.*, 2019), arguing that the terms flatten difference among and between life forms. Drawing attention to the ongoing struggles that many racialized populations have endured to be seen as "human," Black scholars of race have argued that "giving up" humanism is a privileged act for (white) populations whose "…humanity is presumed," whereas "other communities have struggled too long for the humanistic prize" (Gordon quoted in Z. Jackson 2013, p. 672). In a similar vein, Davis *et al.* (2019) argue that recent multispecies analyses have uncritically focused on the networked kinship relations between plants, animals, and people associated with, for example, the "Plantationocene," thus advancing a color-blind, surface-level interpretation of these ecological spaces and their regimes of governance and control. Such renderings do not acknowledge the forms of racial and sexual oppression which constitute plantation environments and ultimately gloss over forms of racialized power and social and ecological hierarchies that structured plantation landscapes and present-day forms of extraction.

Relational Marxist scholarship (referenced in the sub-section "Relational space and place" above) may be better suited to address areas where posthumanism comes up short, especially in flattening ontologies and relations of power. As mentioned earlier, relational Marxism views relations between entities as inherently unequal and dialectical. Marxist interpretations hold that humans and nonhumans do not have to exist on the same ontological plane to be understood relationally (Ingold, 2011; McGuire, 2021). As some environmental Marxists note, separations between humans and nonhumans are at times useful as they can sharpen a focus on the material transactions of capitalism that drive in environmental disaster and injustice (Hornborg, 2020).

Identifying and unraveling tensions internal to posthuman political ecology and related approaches has implications for advancing a REG approach. First, such work draws attention to the historical and ongoing struggles of Black, Indigenous, and People of Color to be seen as "human" and how moves towards symmetrical ontological treatment of human and nonhumans in EG structures may subordinate, invisibilize or deny their experiences. Second, more broadly, such actions question to what extent the ontological equivalence of humans and nonhumans contributes to radical praxis or emancipatory politics (Lave, 2015) which are key objectives to any political ecology-grounded agenda. Third, from a Marxist standpoint, the erasure of distinctions between humans and nonhumans can obscure the arrangements of unequal exchange undergirding socio-environmental exploitation and the loci of power driving such arrangements (Hornborg, 2017). Thus, REG projects inspired by posthumanism must be explicitly anti-racist while actively working against universalizing discourses that erase marginalized populations. Further, they must veer away from idealistic interpretations of human-nonhuman synergies and view unequal power as an integral part of socio-environmental relations and driver of change.

Relations of praxis

A fourth relational ontology in considered by geographers concerns praxis. Geographers, especially in the radical and critical traditions, have long advocated understanding socio-ecological problems in order to change them, although their capacity to realize this by moving beyond the academy has been limited (Castree, 2000; Smith, 2005; Osborne, 2017). While praxis has not been explicitly theorized as a relational ontology, it is inherently relational in its emphasis on the dialectical unity of thought and action. Thus, praxis is indispensable for a REG framework that not only analyzes how socio-ecologies are unjustly governed but engages in the action necessary to govern them differently.

Praxis is essential to radical human geography that critiques to effect change in the world, whether by challenging hegemonic narratives, analyzing power inequalities, exploitation, and oppression, proposing alternatives, or engaging in direct action (Peet, 2000; Hubbard *et al.*, 2002; Blomley, 2006). Various notions of praxis have been mobilized, often drawing from Marx's (1888) notions of "practical-critical" activity. Gramsci expanded upon the philosophy of praxis, which Osborne (2017, p. 850) summarizes as "the reciprocal relationship between thought and action wherein ideas become a material force for emancipatory social change." For Gramsci, critical thinking and education enable subaltern groups to counter hegemonic ideas, change notions of "common sense," and create their own politics. The unification of thought and action is not only important in the abstract, but in its potential to transform the world: "praxis is that form of activity that, when executed within a particular conjuncture, proves capable of transforming its conditions of possibility" (Wainwright, 2022, p. 42).

Critical scholars of gender, race, and Indigenous studies emphasize another key relation of praxis: the practical and material effects of the research process and the importance of being conscious and intentional when developing relationships with research participants in order to effect positive change rather than only to minimize harm. Staeheli and Lawson (1995, p. 333) wrote, "feminist research processes reconstruct theory, method, and scale with the goal of transforming gendered power relations." This explicitly concerns the research process itself. For example, Cahill (2007) advocates relational praxis generated through participatory research methods, in which research is inhabited by an ethics of care. Additionally, notions of power, privilege, and identity are foregrounded in the research process as they shape the multi-positionings of the researcher (Johnson *et al.*, 2021). Praxis is achieved by doing research *with* rather than *about* other groups of people in ways that effect change through the relationships that are formed (Osborne, 2017).

Inputting praxis into REG raises two issues that require further reflection. The first concerns a divide between policy and action. Praxis in political ecology is oriented towards the "practical-critical" activity of subaltern groups that get involved in direct movement and action (Loftus, 2015), and thus can be disconnected from policy and formal processes that are driven by powerful actors. On the other hand, political ecology has consistently advocated principled and strategic engagement in policy (Walker, 2006; Blaikie, 2012; Dwyer & Baird, 2014; McCusker, 2015), which can ignore engagement with subaltern groups in political movements. However, the divide between policy and politics is hardly ever clear-cut, as Bebbington (2015) and McCusker (2015) have argued. Praxis in REG should similarly not draw false divides between policy processes and direct action, social movements, and other forms of contentious politics. REG's focus on heterogeneous and unequal social and ecological relations demonstrates that there are a range of different pathways for engaging in praxis.

A second issue concerns the precise forms of action that praxis should take. Some critical geographers seek to move beyond armchair radicalism but have not addressed what strategies and actions are most effective, despite their experiences with activism, social movements, and policy work. Linking critical thought with action does not inevitably lead to equitable, just, and effective forms of praxis. Serious thought, resources, and energy need to go into "practical-critical" activity and honing activist skills in the same way that we train and practice our critical thinking capacities. This includes considering how and when action can be problematically compromised by inequalities and exclusions shaped by intersections of class, gender, and race, including those that manifest between researcher and activist collaborators.

4.   A framework of relational environmental governance (REG)

This section draws insights from the four types of relational ontologies discussed in the previous section to advance a theoretical framework of REG. We do so by outlining four key "moves" that are central to the framework and summarized in Figure 1: ontologies, epistemologies, methodologies, and praxis. We use the term, "moves," to underscore the dynamic and fluid nature of the framework's components (as opposed to pre-determined, static "rules") and to encourage collective flows of action towards socio-environmental transformation. Instead of producing a comprehensive manual for conducting REG critical scholarship, we offer a set of moves that seek to guide how a relational approach to EG could be pursued.
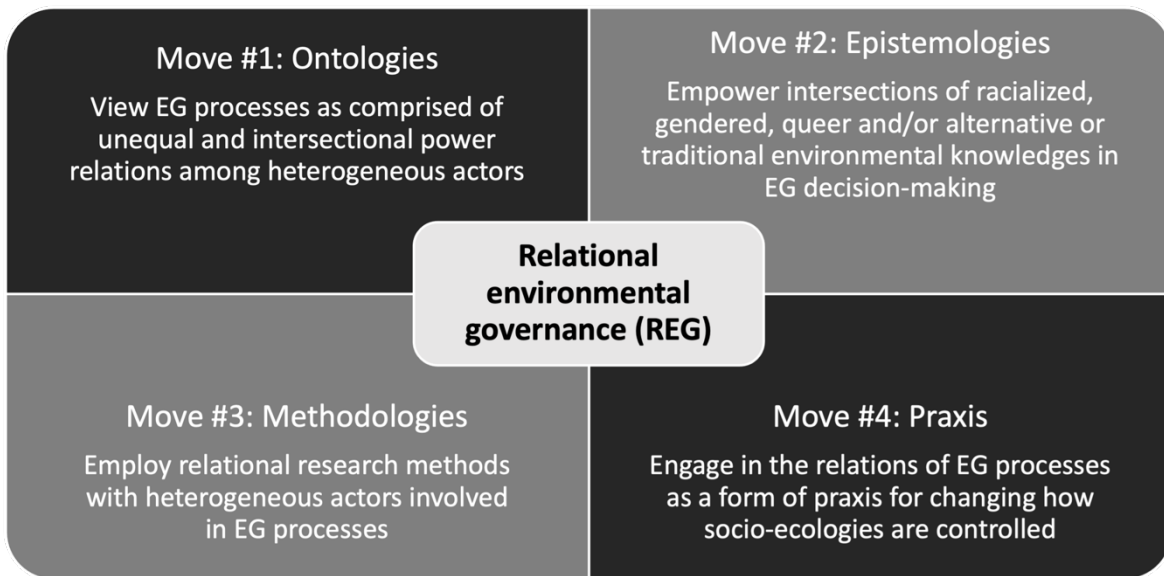

Move #1: Ontologies
View EG processes as comprised of unequal and intersectional power relations among heterogeneous actors

Move #2: Epistemologies
Empower intersections of racialized, gendered, queer and/or alternative or traditional environmental knowledges in EG decision-making

Relational environmental governance (REG)

Move #3: Methodologies
Employ relational research methods with heterogeneous actors involved in EG processes

Move #4: Praxis
Engage in the relations of EG processes as a form of praxis for changing how socio-ecologies are controlled

Figure 1. The four moves of a REG framework.

Move #1: Ontologies

This first move of a REG framework is ontological in that it advocates viewing EG processes as inherently comprised of unequal and intersectional social and power relations among heterogeneous actors, both human and non-human. This contrasts with mainstream scholarly and policy approaches to EG discussed earlier that focus on the formal mechanisms and actors involved in governance arrangements. Many EG arrangements, such as state-led environmental conservation programs or private-driven certification, contain formal rules and procedures and official actors, such as government agencies, NGOs, and private companies. However, a relational approach moves beyond these to analyze the relations that envelop, permeate, intersect with, and shape them. Rules, mechanisms, and norms are produced via unequal power relations and continue to structure social relationships between the actors involved. Furthermore, many environments are governed by informal processes that contain unspoken rules and norms but are more importantly driven by social relations among actors, such as in cases of customary resource governance. Relational ontologies prompt an analysis of relations as inherently unequal and exclusionary. Governance processes are driven by unequal power relations shaped by intersections of class, race, gender, and Indigeneity.

This ontological move also accounts for a diverse range of human and non-human actors that play a role in governance processes but are not usually considered. These include a range of subaltern groups, particularly those with intersectional identities, who are excluded from official decision-making processes (and bear many costs of the decisions made) yet play a critical role in shaping how social ecologies are controlled, managed, and transformed. This not only includes human actors excluded from governance processes but also the non-human entities they interact with. Formal governance arrangements are often set up to assert control

over a resource or environment rather than to try to effect change *with* non-human natures. In contrast, many Indigenous peoples have different ontological relationships with the non-human world that shape their decisions and practices (Muller *et al.*, 2019; Paul *et al.*, 2021). Thus, it is important to consider non-human actants as a material force in governance processes, especially in how they are enrolled into unequal social and power relations. Recognizing the capabilities of non-human beings requires the dismantling of enduring settler-colonial relations with the environment, which have centered capitalist and extractivist processes while obscuring connections with the Earth based on Indigenous forms of stewardship.

One way to demonstrate the value of this move is in relation to private, non-state governance initiatives and mechanisms that produce "sustainable" resource commodities such as soy, biomaterials, palm oil, rubber, and seafood (Ponte, 2014; Foley & Havice, 2016). A prominent example is the Roundtable on Sustainable Palm Oil (RSPO), which emerged in the early 2000s in response to weak state industry regulation and growing public awareness, to govern the production of palm oil according to global production standards. The initiative employs a mechanistic, mainstream EG approach that relies on governance rules and mechanisms to bring a range of official "stakeholders"—small-scale palm oil farmers, companies, buyers and traders—together to co-govern the resource, while removing major power disparities between actors. However, such an approach misses the wider set of unequal relationships that constrain how sustainability operates in the sector, such as longstanding land-grabbing relations, company denial of Indigenous land rights, and growing connections between palm oil cultivation and illicit drug activities.

Instead, a relational approach to EG would consider the RSPO as one element of a much larger governance landscape, which includes the broader political economy of the palm oil industry, that continues to favor cheap palm oil and ignores the social and environmental externalities that keep prices low. It would also address how global sustainability standards interface with localized social relations of production involving palm oil companies, government officials, transmigrant smallholders and laborers, and others, and how such initiatives reconfigure local notions of authority while limiting sectoral transformations to maintain "business as usual" (Pye, 2019; Johnson, 2022). Lastly, a REG approach would recognize the wider cultural and spiritual relations that Indigenous peoples have with nature and how a narrow framing of land in RSPO grievance processes, which often reduces land losses to financial matters, fails to consider impacts on Native dignity, culture, and faith (Silva-Castañeda, 2015). A REG approach sees this complex, broader set of power relations beyond the rules and mechanisms of the RSPO as an indispensable part of how palm oil production is governed.

Move #2: Epistemologies

The epistemological move in a REG framework emphasizes empowering the intersections of racialized, gendered, queer and/or alternative or Indigenous environmental knowledges in EG decision-making. A meaningful REG framework starts from the understanding that conventional EG institutions and their Eurocentric tendencies often reinforce the colonial understanding of the separation of nature and society while authorizing continued ontological and material violence on peoples and landscapes (Daigle, 2016; Fisher *et al.* 2022). Enduring colonial logics and processes have suppressed local Indigenous ecological knowledges, thus leading to increased ecological vulnerability of land and seascapes. Our relational framework, instead, upholds Native knowledge systems and honors the synergistic relations of humans, plants, and animals as essential yet unequal political actors in complex ecosystems (Sundberg, 2014). Further, it supports the unearthing of Indigenous, racialized, gendered, queer and/or other alternative knowledges and their application to EG contexts to generate ecologically resilient outcomes.

In practical terms, this move can be seen in the revival of Indigenous stewardship practices which are guided by diverse ecological knowledges. The heterogeneous nature of Indigenous peoples and the varied relations they have with plants and animals produce a wide variety of local practices and meanings which in some cases, maintained or enhanced "…the abundance, diversity, and/or availability of natural resources or ecosystems" (Fowler & Lepofsky, 2011, p. 286). The Amah Mutsun Tribal Band (AMTB) of Central California is one tribe which historically relied on Indigenous stewardship practices to responsibly tend to the plant and animal populations inhabiting their ancestral territories and to fulfill eco-spiritual obligations over thousands

of years (Johnson & Sigona, 2022). Practices such as pruning, tilling, irrigating, and most importantly, "cultural burns"—frequent, low-intensity controlled fires— cleared undergrowth, reduced fuel loads, and increased diversity and sustainability of diet-important plants and animals (Lightfoot *et al.*, 2021).

Overall, such coordinated practices shaped ecologically resilient lands. Colonization and relocation processes of the 18th to 20th centuries eliminated cultural burns and other AMTB stewardship practices while replacing Indigenous fire knowledge with 'firefighting'—a concept that has dominated EG approaches to wildfire management to the present day. Fortunately, environmental agencies are beginning to recognize the crucial role Indigenous knowledges play in countering climate change-induced drought and catastrophic fires and are working to integrate cultural burns into local wildfire management plans. Such efforts illustrate the power in merging, prioritizing, or integrating different knowledge systems and epistemological viewpoints for positive environmental outcomes. All knowledges have different values and weaknesses, and thus political ecologists are encouraged to consider how different knowledges relate to one another while attending to their varied power dynamics in the pursuit of transformational solutions for pressing ecological crises. A REG approach destabilizes problematic environmental understandings rooted in white supremacy, anti-Blackness, and settler-colonial relations (Daigle & Ramirez, 2019) and urges us to imagine different futures informed by diverse knowledges and the changing power relations in which they are entangled.

Move #3: Methodologies

The third move of a REG framework is to employ relational research methods with heterogeneous actors involved in EG processes. Political ecologists, employing a feminist lens, have long studied how research involves a relational approach whereby intersectional identity markers such as gender, race, and class shape "access" to research participants and their daily lives (Johnson *et al.*, 2021; Katz, 1994). This is especially true in instances of EG where power and privilege of the researcher can facilitate easier access to governance processes in various scientific, policy, and commercial settings. While conventional research techniques such as structured interviews, participant observation, and report analysis are key to obtaining information from formal actors involved in EG contexts, they are less helpful in tapping into the personal environmental knowledges of non-elites. If a REG approach aims to reveal alternative knowledges grounded in multi-faceted histories and community meanings, then more publicly engaged, culturally attuned methods and methodologies must be used in political ecology research.

Storytelling, a technique long used in family and local settings, is one such method as it represents a culturally appropriate way of creating and sharing information (Rice *et al.*, 2015) while seeking to understand how people make sense of the world around them (Harris, 2021). By striving to comprehend how people see themselves "in-the-world" and how their daily socio-environmental relations are changing due to environmental uncertainties, storytelling opens new epistemological understandings of environmental change that uses intimate experiences, as opposed to solely scientific knowledges, to communicate the severity of environmental crises while forging plausible actions and solutions.

Harris (2021) argues that "storying climate change" can lead to better understanding in nature-society relations. When used by scientists in climate change governance—an EG sphere often dominated by abstract, scientific discourses—storytelling can facilitate more effective communication of climate change threats to the public by engaging language and histories that connect with people's personal experiences. Additionally, by listening to people's stories, scientists and policymakers can better understand the environmental anxieties of specific communities and how environmental change affects their day-to-day lives and relationships (Sakakibara, 2017) to ultimately shape culturally specific climate change policies and institutions that are more in tune with place-based identities and community belief systems.

Political ecologists have shown how narrative-centered methodological approaches can also facilitate joint dialogue in instances of conflicting opinions and ideological polarization. When it comes to differing views on climate change (e.g belief in its existence or denialism), storytelling is useful in revealing common core values and other overlapping interests rather than focusing attention on people's voting behaviors or political beliefs (Shaw & Corner, 2017). Given internal distinctions within and among groups and the multitude of unequal relations which spur human experiences, we recognize the diversity of stories and the power

dynamics among them. For example, some stories may discuss the objective impacts of environmental change on certain communities while others may express harmful ideas about particular cultural or ethnic groups and environmental destruction. When assessing stories, it is important to specify key terms and objects of study (see Edelman, 2001), recognize dominant narratives being shared, and question whose interests they serve and what kinds of harm they may support. Such a relational analysis interprets stories as differently situated while aiming to enhance communication within and across groups for collaborative and effective actions against environmental crises.

Move #4: Praxis

The fourth move of a REG framework is to relationally engage with EG processes, becoming involved with them as a form of praxis for changing how control and power over socio-ecologies operates. REG seeks to move beyond critique of governance processes to consider modes of praxis that ensure socio-ecologies are governed in more just, equal, and sustainable ways. Such a mode of praxis is not just about engaging in pre-existing governance arrangements, but seeking to alter the unequal, exclusionary, and heterogeneous sets of relationships that are part of a broad understanding of EG that we have outlined in this article. While governance, from a political ecology perspective, is often critiqued as rule, control, and power *over* oppressed and marginalized groups, REG is anchored by the notion of praxis, which encourages focus on the unequal interactions among various heterogeneous human and non-human actors and, importantly, ways to change them. By focusing on relationships and their qualities and dynamics, REG engages a multitude of actors from various positions of power towards just socio-ecological transformations. Praxis is about shifting governance towards something different, which can be driven by all actors, with an emphasis on empowering intersectional groups of exploited and oppressed peoples. To do so, action must be taken that engages in some way with pre-existing governance arrangements, not necessarily only from within, but also in solidarity with the activists, movements, and subaltern groups who are excluded and seeking to change the political calculus from the outside.

There are a range of forms of governance praxis that could be identified, one of which is engagement in debates and action to shape environmental futures. Scholars play an important role in envisioning, theorizing, and strategizing for futures that are more socially and environmentally sustainable and just. They do so, not only in isolation from their desk, but in relation to organizations, movements, activists, and communities that are already working in that direction. While scholars have been involved with a range of movements, for the sake of space, we focus on the apt example of engagements with eco-socialism, as demonstrated in Matt Huber's (2022) book, *Climate change as class war: Building socialism on a warming planet.* One of Huber's key arguments is that to take on fossil capital and decarbonize the planet, we cannot solely rely on the distribution of knowledge regarding the causes and impacts of climate change. We must engage in class politics to build a mass base of power to transform energy systems, and this involves working directly with the rank-and-file of unions, especially in the electricity sector. While Huber does not frame his work around the concept of governance, his arguments have much to say about the praxis of REG. He is effectively making the case that the only way of changing how the climate is governed, in ways that could stabilize it, is to create a mass base of power that can take power away from fossil capital and deliver it to working people seeking a safe and stable climate to live in. Thus, a focus on praxis in REG concerns how to use critical analyses of social-environmental crises to engage in movements to change how they are governed and ultimately to address them.

5. Conclusion

This article examines the concept of EG within geography and political ecology and its potential for understanding socio-environmental decision-making and outcomes, and for forging equitable, horizontal, and inclusive EG practices. Political ecologists working on governance themes have critiqued how EG has been used in mainstream accounts to conceal difference and to support techno-managerialism. Agreeing with these critiques, we recognize that such interpretations have generated hesitancy among these same scholars of political ecology to mobilize EG in ways that activate its transformational potential. This potential has been hindered by 1) a heterogeneity of approaches which fail to provide a connected conceptual foundation; and 2)

a lack of impetus to further advance praxis and engagement. To address these problematics, we have foregrounded and developed EG's inherent relationality as a central mode of analysis and praxis, to demonstrate the concept's immense theoretical and practical value. To do this, we have parsed various modes of relational thinking linked to different ontological traditions in human geography, namely relational space and place, intersectional and decolonial relations, posthuman and material relationality, and relations of praxis. By outlining tensions, troubles, and possibilities within these traditions, we have identified key facets relevant to devising a clearer, more powerful conceptual understanding of REG.

As the article demonstrates, there is great analytical and practical importance in further developing relationality in EG and building on it in substantive ways. Our framework of four key moves could usefully be incorporated into current or future political ecology projects on EG. We briefly review them here. The first is ontological in that it views EG processes as inherently comprising unequal and intersectional power relations among heterogeneous actors. This approach encourages scholars to move away from a narrow focus on formal rules, mechanisms, and actors and to pay attention to the multiple socio-ecological relations and actors, human and non-human, that shape, permeate, and work through EG regimes. The second move is epistemological, aiming to destabilize colonial environmental logics and to excavate, acknowledge, and implement intersections of racialized, gendered, queer, and/or alternative or Indigenous knowledges in shaping EG projects and outcomes. The third move is methodological, advocating the employment of relational and experimental methods and methodologies that work with and across heterogeneous actors involved in EG processes. Moving beyond critique, the fourth move advances a relational approach to EG that sees transformational intervention and praxis of engagement within and outside of formal structures as crucial to governing relations.

These moves are meant to guide and inspire the further development of a more specific REG framework. It will draw out EG's implicit relationality to construct a rigorous approach that supports transformational change and more equal and just ecological ends. A REG approach is thus more than an abstract academic debate concerning how to theorize governing relations of the environment. It is a pathway for thinking through and acting upon alternative forms of governing with the environment that is anti-racist, more democratic, and inclusive and that can justly address the myriad environmental crises that we face in the current moment and beyond.

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