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## Embracing conceptual diversity to integrate power and institutional analysis: Introducing a relational typology

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**Abstract:** Within environmental governance scholarship, an increasing interest in integrating the study of power with institutional analysis is generating novel theoretical and empirical perspectives for understanding human-environment relationships. The array of different approaches employed to integrate power into institutionalist work promises a range of insights. However, building a cohesive

research agenda depends on efforts to grapple with the conceptual and theoretical diversity that characterizes the study of power. To this end, we introduce a typology of relationships between power and institutions. The typology brings together diverse conceptualizations of power and institutions within a common analytical space and situates them around two overarching research questions: How does power shape institutions? And how do institutions shape power? The structure of the typology aids researchers in generating specific, operationalizable research questions within the broader research agenda on power and institutions. In the paper, we describe the theoretical basis for the development of the typology, which draws on political ecology and Bloomington School institutionalism. Then, we employ the typology to organize a review of environmental governance literature on power and institutions. This exercise demonstrates the utility of the typology not only for organizing the currently disjointed body of work on power and institutions but also for identifying new research questions. Furthermore, it facilitates discussions about deeper ontological, epistemological, and methodological challenges associated with bringing together different theoretical approaches. Ultimately, the typology defines pathways for integrating two important disciplines studying environmental governance, political ecology and institutionalism, and facilitates the accumulation of a coherent body of knowledge.

**Keywords:** Environmental governance, institutional analysis, institutions, political ecology, power

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## 1. Introduction

There is a growing interest in integrating institutional analysis with approaches that are more attentive to the role of power and politics in environmental governance. This emergent body of scholarship engages with diverse manifestations of power, ranging from control over material resources and rule-making authority to power enacted through discourses and issue-framing (Clement 2010, 2013; Theesfeld 2011; Epstein et al. 2014; Kashwan 2016; Morrison et al. 2017). This diversity provides opportunities for enhancing our understanding of environmental governance, in particular self-governance of the commons, but also poses challenges for synthesizing findings across studies and developing a coherent body of knowledge. Indeed, this emerging literature typically engages with multiple conceptualizations of power often without a corresponding effort to clearly define

power in relation to a specific theoretical orientation. As a result, there is an urgent need for conceptual tools that may help researchers to organize existing research on power and institutions and identify opportunities for future research.

The objective of this paper is to contribute to organizing the theoretical landscape within which the literature on environmental governance investigates interactions between power and institutions. It does so by drawing upon the political ecology and the Bloomington School of institutional analysis. The Bloomington School was chosen because of its emphasis on questions concerning collective action, governance, and environmental sustainability as compared to other branches of institutional analysis (See Hall and Taylor 1996; Peters 2011). Furthermore, although the Bloomington School is traditionally associated with the study of community-based management and theories of collective action, it is increasingly being used for the study of large-scale environmental governance (Fleischman et al. 2014; Ban et al. 2017) and has shown a willingness to engage with other theoretical perspectives and approaches (Poteete et al. 2010). Likewise, we engage with political ecology because of its central focus on the role of power in shaping human-environment interactions. An additional justification for engaging with political ecology is to address the criticism that the field has tended to offer critique at the expense of generating or contributing to more concrete policy and governance solutions (Walker 2006; Blaikie 2012). Integrating institutional scholarship on how diverse groups cooperate to solve complex problems can thus also inform recent efforts leveraging political ecological theory to support a more just and sustainable future (Roelvink et al. 2015).

However, rather than proposing a general integration of the two fields, we identify a set of integrative research questions positioned at the intersection of their unique strengths. These questions, in other words, focus on how power (political ecology's focal strength) and institutions for collective action and environmental governance (the Bloomington School's focal strength) interact. Thus, rather than combine theories to answer existing questions in new ways, we aim to take advantage of the theoretical depth within each discipline to identify knowledge gaps, bring existing research into conversation, and, in so doing, add scholarly value by articulating a novel scope of inquiry.

We address this objective by developing a typology of interactions between different conceptualizations of power and institutions. The typology parses major theoretical approaches to power employed by political ecologists, highlighting key forms of power from each. Then, it positions these forms of power as potential drivers and products of institutions. In doing so, it lays out two general lines of inquiry: One centered on understanding how power shapes institutions and the other centered on understanding how institutions shape power. The typology assembles a shared set of concepts and articulates overarching questions about the relationships between power and institutions so that diverse approaches can speak to, rather than past, each other. In articulating questions, the typology not only illuminates new directions for research, but also facilitates the characterization of existing research in a way that potentially informs more systematic

review. Ultimately, the goal of this typology is to allow researchers to embrace the conceptual diversity inherent in studying power and institutions in a way that enhances conceptual clarity.

The remainder of the paper is organized as follows. Section 2 discusses the Bloomington School of institutional analysis, its key concepts and contributions to the literature on environmental governance. Section 3 highlights two predominant approaches to power in political ecology: political economy and post-structuralism. Then, in Section 4, we present a typology of relationships between power and institutions. We elucidate the typology by highlighting examples of existing research and identifying new research directions. In Section 5, we discuss the opportunities as well as some of the challenges emerging from the typology and reflect on the implications of integrating power and institutions for scholarship on environmental governance and the commons.

## 2. Institutional approaches in environmental governance

Institutional analysis is a diverse field of inquiry unified by the basic theoretical assertion that institutions (i.e. rules, norms, and strategies) are instrumental in shaping the constraints, opportunities, and incentives that actors face as they interact with the environment and each other (Hall and Taylor 1996; Ostrom 2005; Peters 2011). This paper draws upon one of these approaches, namely the Bloomington School of institutional analysis (e.g. Ostrom 1990) as it serves as the foundation for a large and growing scholarship on environmental governance. We engage Bloomington School institutionalism in order to address a specific set of theoretical questions about the relationships between collective action, governance, and the commons (i.e. Ostrom 1990; Cox et al. 2010) on the one hand, and power, on the other. The need to understand how groups engage in collective action to govern common resources – instead of simply acting as recipients of top-down state management – remains a central question in environmental governance.

Recent commons scholarship indicates increasing engagement between the institutional approach of the Bloomington School and other critical theoretical approaches. Indeed, the early focus on small-scale, relatively isolated commons has given way to the study of more complex, larger-scale, and globalized commons (Cox 2014). In these, the role of power in shaping governance institutions (and vice versa) is often undeniable. As a result, today's commons scholars examine issues ranging from how local collective action confronts the economic interests of powerful corporate agro-food industry actors (Tschopp et al. 2018) to the power of scalar discourses assembled by the international conservation community to constrain resource users' autonomy in designing institutions (Gruby and Basurto 2013). The aim of this paper is to contribute a basic organizational scaffolding in this rapidly developing body of scholarship bringing Bloomington School-inspired studies of collective action and governance into conversation with diverse approaches to power.

Despite focusing on the Bloomington School of institutional analysis, it is important to acknowledge that other institutional approaches have engaged more extensively with power. For example, historical institutionalism has long-emphasized the role of power asymmetries in institutional change and has studied how institutional processes operate alongside other factors such as ideas and narratives to shape political outcomes (Hall and Taylor 1996). Critical institutionalism also deals with power from a multiplicity of perspectives, ranging from material and non-material forms of influence to less visible processes of meaning- and value-formation (Cleaver and de Konig 2015). However, these approaches have a tendency to focus on large-scale structures and processes that unfold over an extended period of time, often neglecting the smaller-scale structures and processes that underlie collective action and self-governance of the commons. The commitment of the present paper, meanwhile, is to understand the relationships between power and institutions in a way that is compatible with well-established theories of collective action and self-governance. To clarify, engagement with Bloomington School institutionalism does not necessarily imply the exclusion of other institutionalisms. For example, Forsberg (2018) draws on critical institutionalism to frame the need to incorporate power alongside Ostrom's (1990) institutional design principles. Again, the aim of the present paper is to provide a tool that can be used to gather and organize institutionalist scholarship that draws upon diverse theories of power. Through this, we seek to enhance analyses of key overarching theoretical questions that have been and remain central to commons scholarship: How do collective action and environmental governance emerge, evolve and persist?

With respect to institutions, The Bloomington School also offers a sufficient degree of conceptual granularity to inform a rich set of operational questions about the intersection between power and institutions. Institutions are "the prescriptions that humans use to organize all forms of repetitive and structured interactions including those within families, neighborhoods, markets, firms, sports leagues, churches, private associations, and governments at all scales," (Ostrom 2005). They are linguistic constructs that specify what actions must, must not, or may be taken given certain conditions (Crawford and Ostrom 1995). A key theoretical development within the Bloomington School was a systematic grammar distinguishing among different kinds of institutions. The grammar of institutions offered a resolution to the so-called babbling equilibrium, in which institutional theorists advanced a confounding multiplicity of terms signifying a wide variety of divergent and overlapping institutional concepts. The Bloomington School's grammar differentiates among rules (prescriptions associated with an enforceable punishment), norms (prescriptions based on internal and external conceptions of right and wrong), and strategies (shared understandings to coordinate interdependent actions, without a normative dimension). Institutions can also be formal or informal, written or unwritten. Furthermore, institutions structure multiple types of interactions ranging from those that govern operational decisions to those that define how operational rules are created (Ostrom 2005). Our goal is to draw on

political ecology to develop a conceptual foundation for better understanding how these institutions are both shaped by and shape different forms of power.

Finally, the Bloomington School has developed a number of important analytical frameworks (Ostrom 2005, 2009; Epstein et al. 2013) used to define, test and develop theories (Cox et al. 2010; Epstein et al. 2013; Cox 2014), bridge connections to scholarship on social-ecological resilience and robustness (Walker et al. 2002; Anderies et al. 2004), advance formal policy analysis (Siddiki et al. 2011, 2012) and extend work on polycentric governance (McGinnis 2011; Gruby and Basurto 2013). The utilization of these theoretical and methodological approaches has enhanced scholarly understanding of commons governance. Efforts to integrate power and institutional analysis can complement as well as draw from these theoretical and methodological contributions.

### 3. Power in political ecology

Political ecology is a diverse field unified by its attention to the role of power in shaping human-environment relationships (Neumann 2005). Theory and research in political ecology seeks “to address the condition and change of social/environmental systems, with explicit consideration of relations of power” (Robbins 2011, 20). Although a central concept for political ecology, power is theorized in diverse ways that mirror the eclecticism of the field itself. In this paper, we draw a distinction between conceptualizations of power based in neo-Marxist political economy and those based in post-structuralism because this represents the most fundamental and comprehensive distinction within the field (Walker 2005). In general, power as conceived of in political economy resides in relatively stable societal structures that determine control over and access to resources. In contrast, post-structuralist notions of power call into question the stability of structures such as class, identity, states, and markets. Instead, they explore how more contingent constructs influence thinking and practice and what they reveal about the organization of society. Although political economic and post-structuralist theories of power have been used in concert (e.g. Steinberg 2001; Peet and Watts 2004), categorizing them according to their theoretical and epistemological foundations is important to the task at hand.

Below, we describe the theoretical foundations of each approach, as a first step in generating a typology of interactions between power and institutions. In doing so, we highlight key concepts that each theoretical strand envisions as embodying power. We use these concepts, listed in Figure 1, as the basis for generating a theoretically and conceptually specified set of questions about diverse interactions between power and institutions. The typology, introduced in the following section, organizes these questions within a common plane.

#### 3.1. Power in political ecology rooted in political economy

Political economy forms a basis for understanding power in much of the political ecology literature. It conceptualizes power as existing in persistent structures

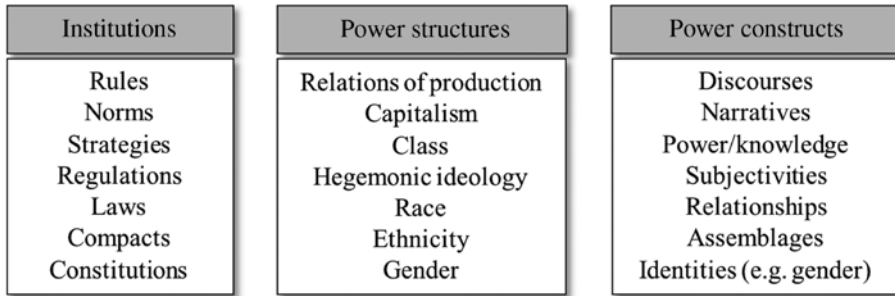


Figure 1: Key concepts for studying interactions between power and institutions.

in society that influence access to and control over resources. Marxian political economy dominated the field's early explorations of ecological degradation and marginality in resource-dependent communities and remains a theoretical cornerstone (Watts 2002; Robbins 2011). Broadly, political economy examines the interplay between economic activity and social institutions. For political ecology, a focus on the social relations of production links political economy with ecological processes (Watts 1983; Blaikie and Brookfield 1987). Relations of production include the conditions determining access to and control over resources and the patterns by which wealth and capital accumulate through production and commoditization of natural resources (Peluso and Watts 2001). Scholars often study class-based strategies to maintain control over the benefits derived from resource use and the social and ecological implications of this control.

Many early political ecologists argued that capitalist relations of production constitute power structures that drive environmental degradation (Blaikie 1985; Bunker 1985; Hecht 1985; Little et al. 1987; Bassett 1988). Dominant, property-owning classes, they argued, seek to extract surplus wealth from productive land through exploitative labor relations and degradative practices, accumulating increasing levels of wealth and property while disenfranchising peasants. Peasants are subsequently forced onto more marginal lands, which become further degraded. As environmental damage worsens, property-owners or firms devise more innovative and efficient ways to extract surplus from an increasingly degraded natural resource base and, in doing so, pass on the environmental costs to society (O'Connor 1988). Scholarship drawing on Gramsci argues that in addition to material forces of production, powerful ideologies that pervade cultural and social life are also needed to uphold class relations (Moore 2005; Ekers et al. 2009; Mann 2009).

More recent applications of Marxian political economy have focused on neo-liberalization (Castree 2008a,b), examining how the extension of market forces in environmental sectors continues to reshape access to and control of resources with corresponding impacts on society and the environment (McCarthy 2006; Campling et al. 2012; Carothers and Chambers 2012; Pinkerton and Davis 2015). Related work drawing on Karl Polanyi argues that even as society is



forced to respond to previous rounds of environmental degradation by creating new governance institutions, these institutions serve only to reinforce the capitalist system (Polanyi 1944). Despite optimism within ecological modernization theory around the potential economic benefits from environmental sustainability, contemporary political economy scholars argue that economic interests continue to drive the behavior of firms as well as states, regardless of ecological implications (Schnaiberg et al. 2002). For example, recent work on eco-certification and fair trade demonstrates that transnational institutions meant to address the social and environmental consequences of capitalist-led degradation continue to facilitate the accumulation of capital, entrench existing political economic power structures, and potentially extend environmental damage (Mutersbaugh 2002; Guthman 2004; Klooster 2006; Ponte 2008).

A structuralist ontological-epistemological perspective underpins many conceptualizations of power based in political economy. This perspective asserts that power manifests in relatively stable structures of society and that these structures can be understood, at least in part, in terms of an underlying logic determining their operation and effects. Collectively these approaches highlight a number of potentially relevant concepts embodying power, which we refer to as power structures (Figure 1). These include capitalist markets, relations of production, and related hegemonic ideologies. Categories such as gender, race, ethnicity, and class are also relevant power structures due to the ways in which they influence access to and control over resources (Agarwal 1994; Hurley 1995; Campbell et al. 1996; Heynen et al. 2006).

Bringing structural power more squarely into conversation with institutionalism drives at least two primary questions at the intersection between collective action on the commons and power. First, to what extent do exogenous power structures, e.g. global capitalist forces, influence local-level collective action and governance (or, conversely, to what extent does collective action influence these forces)? Second, how do endogenous power structures within a group of governing actors undermine (or promote) collective action and to what extent do institutions reshape those effects?

### **3.2. Power in political ecology rooted in post-structuralism**

Post-structural theory and its approach to the study of power has become increasingly salient in recent years. Post-structural political ecology emerged in part as a response to the materialist political economy scholarship of the time. It asserted that any analysis of the environment and society is incomplete so long as it fails to examine the discursive construction of its underlying concepts and logic (Escobar 1996). Post-structural theory conceptualizes power as the product of contingent and variegated relationships between different actors and ideological and material elements. Accordingly, we label these more contingent, ephemeral, and empirically specific concepts as “power constructs” to distinguish them from their counterpart “power structures” in political economy. We identify a number of key power constructs below and list them in Figure 1.



Discourse is a key power construct used in post-structuralist studies of environmental governance (Hall 1992; Darier 1999; Hajer and Versteeg 2005; Dryzek 2013). Discourse is “a specific ensemble of ideas, concepts, and categorizations that are produced, reproduced, and transformed in social practices and through which meaning is given to particular physical and social realities,” (Hajer 1995, 44). Scholars studying discourses seek to understand how they shape the kinds of environmental governance institutions that are conceivable and desirable (Adger et al. 2001). Post-structural political ecology relies on detailed empirical analyses of discourses to reveal the power relations at work in environmental governance, often destabilizing our assumptions about certain structures and categories (Tsing 2005; Campbell 2007; Dryzek 2013).

The closely related concept of power/knowledge is another key post-structuralist power construct, the core ideas of which are that the reach of power is coextensive with knowledge and that expressions of power are specific to the kinds of knowledge produced in society (Foucault 1977, 1980, 1991; Scott 1998). Concepts of environmentality and ecogovernmentality convey how knowledge operates as power in the realm of environmental governance. Luke (1995) has argued that the development of knowledge around sustainable development and natural resources has functioned to control populations, territories, and advance specific ends. Knowledge not only enables the governance of certain groups, spaces, and resources but can also influence individuals’ personal beliefs about who they are (identities) and how they should relate (subjectivities) to the environment (Agrawal 2005; Rutherford 2007).

Political ecologists also engage with relational theories to examine networks and entanglements of heterogeneous elements (material, symbolic, human, and non-human) (Jones 2009; Müller 2015). Relational thinking provides a framework for viewing power as emerging from associations of elements (e.g. within networks or assemblages). Because relational theories discard common distinctions between the social and natural and the human and non-human, power is no longer a purely social concept. For some critics, the extraction of power from the social realm represents a failure to attend to power. However, for many scholars employing these approaches, power is manifested when specific configurations between human, non-human, material, and symbolic elements enable or constrain particular realities (Munro 2009).

Finally, post-structural approaches study identities such as gender, class, race and ethnicity as power-laden constructs (Gibson-Graham 1996; Sundberg 2004; Rocheleau 2008). Identities are power constructs because they shape access to resources and policy processes and influence the distribution of benefits from the use of resources. However, unlike structuralist approaches in which identities are relatively static categories, identities in post-structural approaches are contingent and fluid. For example, considering gender and its relevance to environmental governance entails examining how gendered capabilities interact with multiple other identities and play out differently from one space of environmental governance to the next (Rocheleau and Edmunds 1997; Rocheleau et al. 2013).

A social constructionist epistemology underpins most post-structural examinations of how constructs such as discourse and knowledge shape environmental governance and outcomes. Social constructionism presumes that reality is constituted through social and political processes. For example, ocean space has been discursively constructed as foreign, distant, and unpeopled. This construct has, in turn, influenced how we manage uses of the ocean (Steinberg 2001, 2009). The implications of social constructionism for power are profound because the approach asserts that constructs have power to influence not only how individuals and groups operate in a stable reality, but also to shape reality itself. Yet, post-structuralist scholars have noted that individuals and groups also have power, or agency, to produce reality through practice, highlighting how powerful constructs that may order reality are not impenetrable (e.g. St. Martin and Hall-Arber 2008).

These post-structuralist approaches intersect in at least two important ways with the study of collective action and governance of the commons. First, they deepen understandings of how power affects the way that actors conceptualize their social and ecological environment. Bloomington School institutionalism and common-pool resource theory often emphasize the importance of social norms and internal values for understanding whether groups engage in collective action (Ostrom 1990, 2005). Post-structural power constructs provide a methodological approach to studying how these social norms and internal values emerge and change. A second and related way that attention to post-structural power constructs can contribute to scholarship on commons governance is by illuminating the political role of science (as well as non-scientific knowledges) in governance processes, highlighting how certain scientific understandings of systems work to produce particular sets of institutions and exclude others.

#### 4. Introducing a relational typology of power and institutions

Having briefly described the Bloomington School of institutionalism and the theoretical foundations of power in political ecology, we now address the main objective of this paper by highlighting points of intersection between institutions and different power structures and constructs. We do so by developing a relational typology (Figure 2). First, we describe the typology. Then, we discuss each quadrant thereof in some detail.

The typology is divided vertically according to whether institutions of interest are seen as antecedent or consequent to power. Accordingly, the left half includes research and theory about the influence of institutions over power, corresponding to the broad question: *How do institutions shape power?* The right half relates to research and theory about the influence of power over institutions, asking: *How does power shape institutions?*

The typology is divided horizontally according to the two major theoretical approaches to power in political ecology. The top half contains conceptualizations of power from political economy, which we labeled power structures, and the bottom half includes post-structural conceptualizations of power, which we labeled

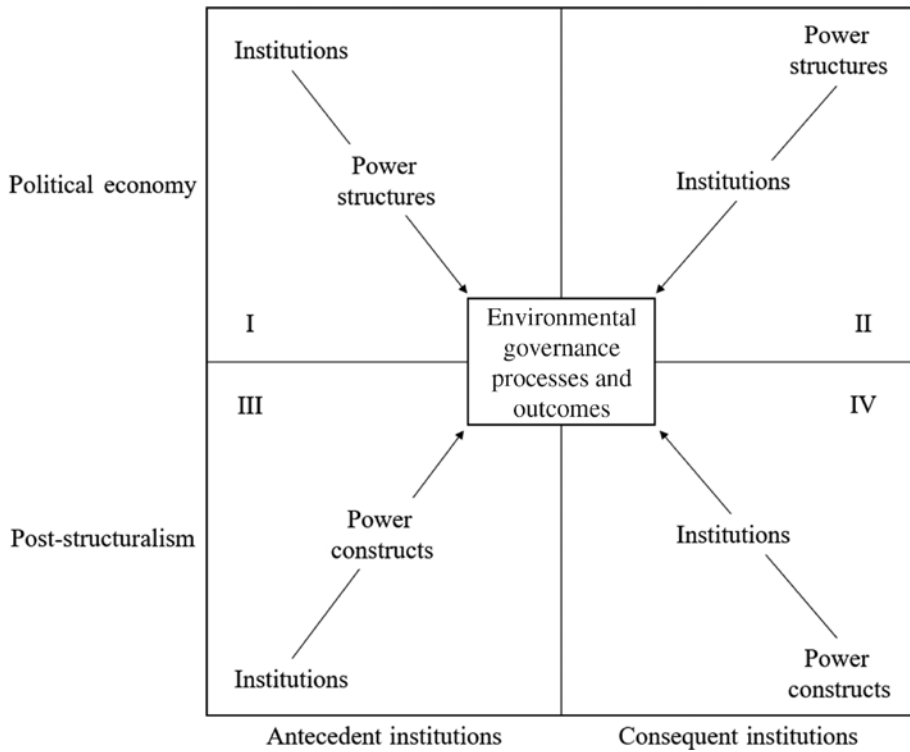


Figure 2: A typology of interactions between power and institutions.

power constructs. Accordingly, the two general questions outlined above branch into four specific questions contained in quadrants I-IV of the typology: I. *How do institutions influence power structures?* II. *How do power structures influence institutions?* III. *How do institutions influence power constructs?* And IV. *How do power constructs influence institutions?* Figure 3 visualizes this branching approach to organizing the study of diverse interactions between power and institutions.

Figure 1 facilitates further specification of power-institution relationships by listing examples of institutions, power structures, and power constructs. Drawing on these, researchers can pose a wide range of questions about relationships between operationalizable concepts. For example, how do laws shape capitalist relations? How do class differences influence social norms of cooperation? How do rules influence the formation of discourses? How do heterogeneous assemblages enable particular regulations? Environmental governance processes and outcomes are depicted in the center of the typology overlapping with all four quadrants, reminding us that, ultimately, we are interested in the implications of power-institution relationships for environmental governance and their social and ecological consequences.

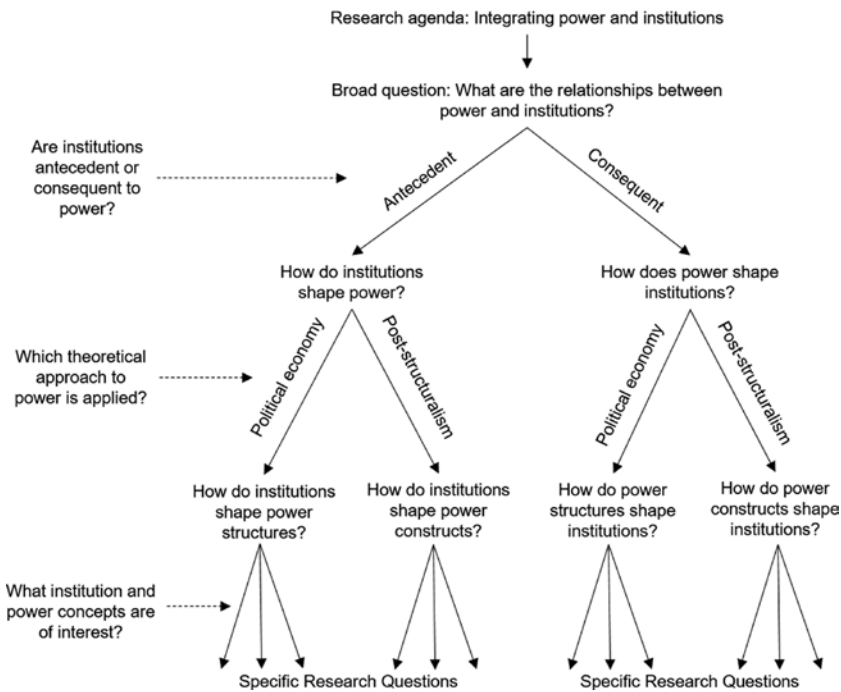


Figure 3: A research agenda for studying interactions between power and institutions.

In the following four subsections, we provide brief examples of existing research and potential research questions that can be situated in the typology. We do this to indicate the type of work that can populate the typology as well as to highlight the utility of the typology for understanding and identifying gaps in existing research as part of a broader research agenda on power and institutions.

#### 4.1. How do institutions influence power structures?

Scholarship in quadrant I investigates the ways that institutions influence power structures. It includes studies both of how institutions can reinforce existing structures and how institutions can reconfigure or mitigate the effects of prevailing power structures in environmental governance.

One example of research in this quadrant relates to coinciding interests among institutionalists and political ecologists regarding strategies to mitigate the power of capitalist market structures, to which environmentally degradative effects have often been attributed. Scholarship on local self-governance of the commons has already engaged with such questions. For instance, local institutions for monitoring and enforcing rules to control resource harvesting may moderate the influence of market pressures that emanate from powerful external

economic interests (Agrawal and Yadama 1997; Chhatre and Agrawal 2008). Others document how collective property rights accompanied by local institutions that redistribute profits among groups of resource users can create incentives (and capacity) for collective action toward sustainable resource governance as well as promote independence from powerful actors in supply chains that otherwise tend to consolidate profits and power (Alcorn and Toledo 1998; Bennett and Basurto 2018; Tschopp et al. 2018).

Research questions positioned within the first quadrant of the typology can also address how institutions shape the effects of other power structures such as gender, class, and inequality. Within much of the commons scholarship, the presence of these power structures is addressed under the broad concept of socio-cultural heterogeneity. A substantial body of work from the Bloomington School already addresses questions about how institutions may enable collective action even in the presence of substantial socio-cultural power imbalances. For example, institutions that prescribe procedural or distributional equity may support collective action in the context of socio-cultural heterogeneity and corresponding power imbalances (Poteete 2004; Poteete and Ostrom 2004; Mudliar and Koontz 2018). However, additional questions are possible. For example, can micro-credit institutions targeting women alter gender-based power dynamics and reduce dependence on local resources? Do rules that require individuals to contribute to environmental governance efforts in proportion to their level of wealth serve to promote greater equality and sustainability? Or, can effective multi-level institutional linkages increase the participation of disenfranchised classes in the development of environmental policies? Questions conceivable in the first quadrant thus not only help to understand the institutional antecedents of entrenched power structures but may also uncover creative strategies for overcoming predominating power structures linked to unsustainable or inequitable patterns of environmental governance (Andersson and Agrawal 2011).

#### **4.2. How do power structures influence institutions?**

Quadrant II inverts the questions posed above by asking how power structures influence institutions. Much of the inquiry in this quadrant helps to explain how power structures such as class, capitalist markets, or gender might shape the laws, rules, and regulations of society. For example, one might ask how capitalist markets create incentives for corporations to pursue less stringent regulatory institutions, while others might try to explain the disproportionate influence of one gender over others in the design and implementation of institutions.

A particularly important topic of debate in institutionalist scholarship rooted in rational choice theory and methodological individualism relates to the impact of structures of wealth inequality on processes of institutional emergence and change. Some have argued that, when the interests of actors in creating or changing institutions are not aligned, wealthier actors can leverage their power to influence decision-making and see their preferred institutions enacted. Assuming that indi-

viduals and groups incur costs when bargaining over policies, those with greater wealth can direct more resources towards bargaining processes, withstand higher risks of failed negotiations, and hold out for longer before needing to reach an agreement (Knight 1992). While unequal wealth structures can reduce cooperation in commons governance (Cardenas 2003), this outcome is not inevitable. For instance, wealthy parties may make significant contributions to public goods – including the design of self-governance institutions themselves – that leave all resource users better off (Olson 1965; Ostrom 1990; Baland and Platteau 1999).

Similar research questions may also be asked about other power structures. Do class, caste or gender enable or limit participation in institutional development and change processes? How might these structures influence not only opportunities for actors to shape institutions, but also the kinds of institutions they promote?

### **4.3. How do institutions influence power constructs?**

Quadrant III addresses questions about how institutions influence power constructs derived from post-structural theory. This can include questions regarding how rules, regulations, norms, and laws shape discourses, networks, or identities. One way to conceive of these questions is to consider ways that the ‘rules of the game’ influence how power constructs like narratives or subjectivities are formed, who is permitted to take part in their formation, and the institutionalized patterns through which they circulate through different spaces of society.

For example, institutions can influence how subjectivities emerge and change. The concept of environmentality exemplifies this process. In a study of decentralization of forest governance institutions in India, Agrawal (2005) found that when individuals engaged in the new self-governance institutions of monitoring and enforcement in forest commons, their subjectivities vis-à-vis the environment changed. They came to favor limiting extraction of forest resources, seeing themselves as agents of forest conservation (Agrawal 2005).

Another line of inquiry can interrogate the institutions that shape how discourses and knowledge form and take hold. Specific rules and norms shape who has the authority to assert their knowledge as true and how it is circulated (Foucault 1971; Mayr 2008). For example, institutions lay out requirements for who is allowed to carry out legitimate scientific research (e.g. possession of academic credentials). Other institutions can specify how information and knowledge travels (e.g. state control of media and laws banning the distribution of anti-state propaganda). These types of institutions can certainly influence discourses. In the context of environmental governance, important questions emerge about what kinds of institutions enable or block diverse perspectives from informing pervasive discourse, which in turn can shape environmental governance. Bloomington School institutionalism has long attended to institutions that shape the generation and flow of information (Ostrom 2005), providing a theoretical foundation for investigating how institutions influence power constructs such as power/knowledge and discourses.

Finally, questions in this quadrant may explore how institutions create networks and entanglements of heterogeneous elements. For example, sustainable seafood and forest certification, which are transnational market-based governance institutions, bring together multiple human and non-human actors into a relatively durable network. Such networks include consumers, retailers, and NGOs that demand sustainably produced fish or forest products, producers who harvest resources and the State authorities that govern them, trees and forests or fish and ocean spaces, and scientists and third-party evaluators who assess the entire system according to a set of sustainability standards. These networks are held together, in large part, by the institutions that prescribe how certification schemes establish standards, assess sustainability, ensure compliance, and transmit information to consumers. Such questions are crucial to the study of commons whose social and ecological dimensions span beyond state jurisdictions and thus often require self-governing institutions that operate across substantial distances.

The questions in this quadrant illuminate a space for novel inquiry. While it is often implicit that rules and norms play a role in shaping power constructs such as discourse, identity, or networks, an explicit institutional analysis of how these constructs emerge and change is yet to be undertaken. To the extent that post-structuralist political ecologists and scholars of the environment see power as contingent, empirically variegated, and subject to reformation, it is worthwhile to ask how society might design institutions that allow reflective and purposive formation of power constructs and thereby contribute to equitable and sustainable environmental governance.

#### **4.4. How do power constructs influence institutions?**

Finally, quadrant IV houses questions concerning how power constructs shape institutions. In other words, how do discourses, networks, categories or ideas influence the emergence, form and function of institutions? Research in this quadrant often illuminates how these power constructs inform what society imagines is possible and desirable. This, in turn, shapes the kinds of environmental governance institutions that emerge and persist.

The study of how scalar discourses shape environmental governance constitutes an example of ongoing research that fits squarely in this quadrant. In the early 1990s, discourses promoting local-level governance of common-pool resources played a role in the promotion of community-based management and a justification for decentralization in natural resource governance. In some cases, the naively optimistic and contextually underspecified nature of these discourses enabled inappropriate or ineffective institutions (Agrawal and Gibson 1999; Lawhon and Patel 2013). More recently, discourses emphasizing the importance of large-scale ecological processes for biological conservation have promoted the formation of national- and regional-scale governance (Moss 2003, 2012; Gruby and Basurto 2013; Sievanen et al. 2013). These studies demonstrate how studying power constructs such as discourses helps advance research on the autonomy of



resource users in common-pool resource governance, which has been a central question in commons scholarship (Ostrom 1990; Basurto 2013).

Other power constructs can be just as potent as discourse in shaping governance institutions. For example, entanglements or networks of heterogeneous elements (e.g. scientists, foundations, States, symbols, and spaces) enable or legitimate particular kinds of governance institutions. Along these lines, Forsberg (2018) examined how a non-human actor (notched sticks) created information networks among groups of commoners and produced the conditions for self-governance of a variety of commons (Forsberg 2018). In other cases, studying the role of non-human elements (e.g. sedentary or highly migratory species) in the emergence of particular institutions is relevant where cross-scale and multi-level ecological interactions influence environmental policy.

The common thread uniting inquiry in quadrant IV is the assertion that these constructs – discourse, power/knowledge, and networks or assemblages comprised of human and non-human actors – have the potential power to advance particular institutional arrangements and outcomes.

## 5. Discussion

This paper contributes to a rapidly developing program of research seeking to understand the role of power in commons governance and institutions (Clement 2010, 2013; Theesfeld 2011; Epstein et al. 2014; Kashwan 2016; Morrison et al. 2017). Specifically, we developed a typology to classify relationships between power and institutions. The organization of the typology is based upon distinguishing between two primary theoretical approaches to power (the horizontal division) and whether power or institutions are positioned as the agents of influence (the vertical division). We then used this typology to highlight existing research that fits within each quadrant and opportunities for future research. Bringing together the unique focal strengths of political ecology and Bloomington School institutionalism (especially that which relates to environmental governance) illuminates novel research questions about how power (specifically, power with a strong theoretical and conceptual basis in political economy or post-structuralism) and institutions (as conceptualized by the Bloomington School) interact. Rather than integrate the fields to address existing questions differently, our goal was to draw out the specific questions rooted squarely at the intersection of the two approaches. These questions, in turn, should generate insights into environmental governance more broadly, a shared interest of the fields. Other important questions, such as how power shapes human-environment relations in spite of institutions (Agrawal 2003) fall outside the boundaries of our discussion. This bounding of scope also acknowledges that many questions can be sufficiently addressed by political ecology or institutional analysis without the need for integration.

Beyond guiding the formulation of empirical questions, the typology also brings epistemological and methodological challenges to the forefront, issues

which any effort to bring critical and institutional approaches into conversation must address. Perhaps the most preeminent of these challenges arises from the theoretical roots of Bloomington School institutionalism in rational choice theory. Rational choice theory assumes that individuals make choices to maximize their own net benefits based on information about the structure of the situations they are involved in and the behavior of other actors. One potential concern, then, is that any theory of human behavior rooted in such a calculative perspective is incompatible with post-structural approaches skeptical of the existence of a universal set of preferences, costs, and benefits on which decisions might be based. Yet, even though the Bloomington School is linked to rational choice theory, it has nonetheless put emphasis on illuminating its failures to explain a wide range of observed empirical phenomena, e.g. the emergence of cooperative solutions to common-pool resource dilemmas (Ostrom 1998). Research at the intersection of post-structural power and institutions may therefore provide opportunities to develop even richer understandings of why people behave the way they do and how they self-organize to overcome governance challenges.

Relatedly, an apparent tension arises from bringing together post-structuralist theories that lean toward constructionism with the typically more positivist approaches associated with Bloomington School institutionalism. However, the idea that society and the environment are socially produced does not fundamentally contradict the premise that institutions are human-created linguistic constructs that influence interactions between people in society and their biophysical surroundings. Existing research examining the influence of social constructions on environmental and natural resource governance demonstrates the potential for coherency (Agrawal 2005; Gruby et al. 2013; Sievanen et al. 2013). As Clement (2010) points out, a critical realist approach offers a useful ontological middle ground for integrating post-structural and institutional concepts (see also Forsyth 2001). While epistemological tensions are certainly worth taking into account, they do not pose insurmountable barriers to addressing the question of power and institutions in the context of studying environmental governance.

While the positivist leanings of Bloomington School institutionalism may be more commensurate with conceptualizations of power rooted in political economy, its focus on methodological individualism poses a different problem. The Bloomington School often explains social outcomes as a result of individual behavior and decision-making (Arrow 1994; Hodgson 2007). In contrast, Marxist-inspired political economy frequently looks to broader political, economic, and ideological forces for explanation. It is thus not surprising that institutionalist definitions of power emphasize micro-dynamics regarding the authority and control that particular actors have over specific situations (e.g. Ostrom 2005) while Marxist political economy often employs conceptualizations of power referent to external processes and broader structures. Drawing explicit connections between power-centric and institutional approaches

therefore fosters opportunities to gain additional insight by investigating both macro- and micro-level processes, and their respective linkages (Knight 1992).

Institutional scholars have, for instance, investigated how inequality in material resources and bargaining power shapes the ability of individuals to enact their preferred institutions. Connecting this perspective with theoretical approaches from political economy involves situating inequality and bargaining power as part of broader power structures in society, for example how capitalist systems of accumulation entrench an unequal distribution of resources. An integrated approach can therefore enrich our understanding of how these broader power structures affect the often-minute processes of environmental governance on the ground. Thus, engaging with theories of power used in political ecology does not imply an abandonment of micro-institutional power dynamics. To the contrary, it compels institutionalists to examine the structural origins of the micro-institutional dynamics of power as well as the potential for institutions to alter the broader power structures within which they operate.

Integrating political ecological and institutional approaches also provides a platform from which to illuminate similar concepts rooted in divergent epistemologies. For example, post-structural approaches that emphasize the role of discourse in shaping individuals' perceptions and actions have an affinity to institutional scholarship on mental models and their influence on individuals' choices (Denzau and North 1994). Similarly, while scholars engaging ideas such as networks and entanglements comprised of social and natural elements have developed radical ontological platforms to account for non-human agency and its implications (Callon 1984; Latour 2005), common-pool resource theory has also concerned itself with how biophysical characteristics shape the realm of possibility of environmental governance institutions (Schlager et al. 1994; Epstein et al. 2015). Forsberg (2018), for example, seamlessly integrates post-structuralist Actor-Network Theory with theories of collective action based on modified rational choice theory to show how non-human actors shape institutions for collective action. Additionally, institutionalists studying multi-level and cross-scale linkages in the governance of common-pool resources (e.g. Cash et al. 2006; Berkes 2008; Poteete 2012) may benefit from scholarship investigating the role of power across scales of social, political and economic organization (e.g. Adger et al. 2005; Neumann 2009). By providing a common space to position research on broad overarching questions, the typology aids in identifying instances when scholars are researching similar concepts yet talking about them in different ways.

Finally, one of the most substantial challenges inherent in studying the ways that power and institutions shape each other entails grappling with the complexity and dynamism that characterizes those relationships. That institutions and power are in fact inextricably interwoven compounds this challenge. For example, institutions constitute an important facet of discourses (Burchell et al. 1991; Hall 2001) and capitalist relations of production are defined by institutions that govern control over natural resources and labor. Thus, understanding

how power shapes institutions and vice versa calls for a mutual externalization of the two concepts, albeit temporarily and artificially. This is not an essentially distinct process from most research, which by necessity captures a select moment or moments in time and brings into focus certain elements while setting others aside. The typology, along with Figure 1, facilitates this by supporting an explicit identification of which elements of power and which institutions a given study investigates.

## 6. Conclusion

The typology facilitates the integration of two fields that, despite shared interests, have developed largely independently from one another. Political ecology and institutional analysis have both generated valuable insights regarding the role of resource users themselves in governance as well as the potentially negative consequences of management through markets and top-down state control (Berkes 1986; Acheson 1988; Ostrom 1990; McKean 1992; Fairhead and Leach 1996; Bryant 1998; Young 2001; Peet and Watts 2004). Despite their corresponding interests, the relationship between the two disciplines has often been characterized as one of distinction rather than convergence (Johnson 2004). Institutional approaches seek to develop an understanding of the kinds of governance arrangements that lead to ecologically and socially desirable outcomes (Ostrom 1990; Cox et al. 2010), but have yet to thoroughly account for the role of power and politics (Agrawal 2003). Conversely, political ecology emphasizes power, yet its varied ontological and epistemological framings can prove overwhelming for policy-makers trying to apply its findings (Walker 2005; Blaikie 2012). This division has meant that questions about the interactions between power and institutions have not been thoroughly addressed. The typology and associated theoretical work presented in this paper serve as a step toward articulating and answering these important questions.

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