Power in collaborative approaches to governance for water: a systematic review

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Power in collaborative approaches to governance for water: A systematic review

Abstract: This paper uses a formal systematic review to examine the extent to which literature discussing collaborative approaches to water governance reflects understanding and awareness of power-related considerations. It makes the case that an analytical approach grounded in theory on power can facilitate assessment of the factors affecting collaboration by identifying the multi-scalar, interrelated mechanisms through which power affects collaborative processes and outcomes. Through the review process, it became apparent that fully accounting for power will better enable scholars to link together seemingly disparate conditions for collaborative success (e.g., inclusion, decision-making power, capacity). A power-based approach also incorporates broad, socioeconomic factors that fundamentally shape processes but often lay outside the analytical scope of local or regional studies on collaboration. Accounting for power, in the forms and scales identified, will result in better-designed, more effective collaborative approaches to water governance.

Introduction

This paper uses a formal systematic review to examine the extent to which literature on collaborative approaches to water governance reflects understanding and awareness of power-related considerations. Understanding power is central to understanding the political process and its consequences for society (Haugaard and Clegg 2009). Addressing power directly and understanding its implications has the potential to improve the design, study and practice of collaborative approaches to water governance.

Governance is concerned with the ways that decisions are made and actions taken (Holley, *et al.* 2012). Collaboration is a specific approach to governance that broadly involves responsibility and power sharing between state and non-state actors (Carlsson and Berkes 2005). A number of different fields examine collaborative approaches to governance (e.g., planning, public administration, environmental management). While differences in label, language and approach exist, there are several characteristics common to collaborative governance processes that serve to bound its definition. These include broad stakeholder inclusion, face-to-face deliberation, shared learning, a willingness to reconsider assumptions, pooling of resources, construction of long term relationships, and consensus-focused decision-making (Ansell and Gash 2007; Conley and Moote 2003; Holley, *et al.* 2012; Kallis, *et al.* 2009; Margerum 2008). Strongly normative foundations of collaboration are reflected in a common underlying assumption of equity, fairness and balancing of interests (Gray 1985).

Proponents of collaboration argue that, when used appropriately, decisions are reflective of a broad range of knowledge, acceptable to all stakeholders, and are thus less likely to be subject to contestation because all interests have contributed to the offered outcomes (Innes and Booher 2010). However, collaboration proponents also point to uncertainty regarding the ability of collaboration to produce better environmental outcomes than traditional, hierarchical processes (Koontz and Thomas 2006; Newig and Fritsch 2009). The increasingly widespread use of collaborative approaches to water governance across both geographical locations and fields of study (e.g., Holley, *et al.* 2012; Innes and Booher 2010; Sabatier *et al.* 2005) makes it particularly important to examine all the factors influencing their effectiveness, especially given the significant investment of time and resources required. Examining collaboration from the perspective of power theory is an effective way to do this.

Many of the variables affecting collaboration can be at least partially explained by theories of power (e.g., Gaventa 2006; Haugaard and Clegg 2009; Lukes 2005). For example, Ansell and

Gash (2007:552) highlight the importance of “incentives to participate” as a separate issue from “power/resource imbalances”, while concurrently noting that “power and resource imbalances will affect the incentives of groups to participate”. Likewise, institutional design is often identified as an important variable in collaboration (Ansell and Gash 2007; Emerson, *et al.* 2012; Imperial 2005), but institutional design principles such as broad inclusion and transparency are fundamentally shaped by the intentions and motivations of those who have the power to frame problems and the information that can be used to address those problems (Hessing, *et al.* 2005).

Theories of power provide a useful way to link together seemingly disparate variables influencing the effectiveness of collaborative processes. In doing so, they reveal broad causal factors and relationships that can provide a more complete understanding of the variables influencing the success of collaborative processes. This approach has been effective in disciplines such as global governance (Clapp and Fuchs 2009; Falkner 2008) and political ecology (Swyngedouw 2006). In particular, power theories make clear that achieving effective collaboration extends far beyond ensuring equitable participation. Broad power relationships and socioeconomic conditions that transcend political and geographic scales must be identified and accounted for (Emerson, *et al.* 2012).

Water presents a useful lens for exploring the impacts of power on collaboration. The governance of water is characterized by interconnected and overlapping political, social and legal structures as sites for the contestation and reproduction of power (Zeitoun and Allan 2008). In addition, a long tradition of using collaborative approaches in the context of water provides a rich pool of scholarship for study.

In the next section, a framework based on power theory developed primarily by Lukes (2005) is presented. This framework was used to inform a formal systematic review (Petticrew and Roberts 2006) that examined the treatment of power across a broad pool of literature addressing collaborative approaches to water governance. The analysis revealed gaps in the

extent to which power has been addressed in literature on collaborative approaches to water governance to date, and helps point the way towards a more effective accounting of power in the future. The paper concludes with implications for theory and practice.

Power and Collaborative Governance – a conceptual framework

Power is a complex area of study. Controversy over definition and measurement means that many researchers choose not to engage with power despite its fundamental influence on policy-making (Macdonald 2007). Lukes (2005), whose perspective strongly influenced this study, developed a three dimensional view that interprets power, as it is exercised in the political process, as domination. This does not preclude the existence or importance of other views on power. It instead reflects the fact that applying this view to collaboration for water governance is contextually appropriate in “mak[ing] sense of certain aspects of social life” (Haugaard and Clegg 2009:4). As Zeitoun and Allan (2008:9) highlight, use of Lukes’ three dimensions is appropriate in situations “where power determines what is known, what is emphasized and who prevails”. Lukes’ framework is frequently applied to environmental policy-making contexts (e.g., Clare, *et al.* 2013; Fuchs 2007; Macdonald 2007) and relevant insights from these fields have been built into the conceptual framework underlying this paper.

Lukes (2005:37) explains that “A exercises power over B when A affects B in a manner contrary to B’s interests”. The specific ways that “A exercises power over B” are analyzed through overlapping instrumental, structural and discursive dimensions. These dimensions are characterized below. A conceptual framework is then presented in Table 1. The final column of Table 1 highlights potential implications of each dimension of power for collaborative processes addressing water governance.

Instrumental power, Lukes’ (2005) first dimension, depends on possession of resources that are useful in shaping policy outcomes in competition with others. This type of power is

characterized by overt competition for influence and measureable use of resources in that competition. Definite, visible, cause-effect relationships make it relatively easy to study instrumental power empirically (Fuchs 2007).

Structural dimensions of power are concerned with the ability to shape policy agendas (Lukes 2005). They acknowledge that decisions are influenced by the social structures within which they are embedded. Structural power is embodied in ‘mobilization of bias’ wherein dominant, hegemonic views that privilege certain groups are reinforced in policy decisions or non-decisions (Schattschnieder 1960). Dominant views shape decisions, even absent the visible use of force, and can constrain the ability of marginalized stakeholders to bring forward issues and solutions that best reflect their interests (Flyvbjerg 1998) – even when deliberative processes are used (Freudenburg 2005). In practice, structural power can be either visible or hidden (Lukes 2005).

Discursive power, Lukes’ third face of power, represents the ability to manipulate the wants and desires of others:

...A may exercise power over B by getting him to do what he does not want to do, but he also exercises power over him by influencing, shaping or determining his very wants. ... that is, to secure their compliance by controlling their thoughts and desires...
(Lukes 2005:27)

Discursive power is far reaching in that public education, lobbying, mass media, and control over knowledge production and technology are used to align societal values with the goals of those with power over these institutions (Lukes 2005). While discursive power can be effectively used as a form of resistance (Gaventa 2006), those most successful in exercising instrumental and structural forms of power are often more successful in exercising discursive power because of control over resources, and an ability to define agendas and participants (Culley and Angelique

2011). Because discursive power is subtle, it is difficult to study empirically (Falkner 2008; Fuchs 2007).

Table 1: A conceptual framework for the analysis of power in collaborative approaches to water governance

Dimension of Power	Potential Predicted Consequence of Power	Specific Concern for Collaborative Approaches
Instrumental Power	Coercion, co-optation, diversion, manipulation, misinformation (Culley and Angelique 2011; Dahl 1957; Falkner 2008)	a. Coercion, co-optation, diversion, manipulation, misinformation
		b. Ensuring meaningful or equal participation through facilitation
	Capacity imbalances that will affect participation (financial, social, technical, institutional) (Falkner 2008; Fuchs 2007; Levy and Newell 2005; Macdonald 2007)	c. Imbalance of financial resources
		d. Unequal capacities (technical, social, institutional, etc.) to participate
Structural Power	Control over agenda setting and problem framing (Bachrach and Baratz 1962; Cook, <i>et al.</i> 2013; Guber and Bosso 2013; Hessing, <i>et al.</i> 2005; Levy and Newell 2005)	e. Who instigated collaboration
		j. Governments initiating processes to generate legitimacy instead of to influence decisions
		g. Problem definition or framing and/or agenda setting
	Active or implicit inclusion or exclusion of actors, (Freudenburg 2005; Gaventa 2006)	h. Inclusion or exclusion of important actor groups
	Control over knowledge production, inclusion and use, self monitoring and reporting (Ascher and Steelman 2013; Falkner 2008; Levy 2012; Macdonald 2007; Williams 2012)	n. Control over information production and use
		k. Appropriate/inclusive use of knowledge
	Unequal access to, and ability to influence, decision-makers (Brooks and Stritch 1991; Falkner 2008; Finger and Svarin 2012; Fuchs 2007; Macdonald 2007)	l. Elite level relationships
		m. Lobbying external to the collaborative process
		o. Backgrounds of representatives (e.g. evidence of revolving doors)
	Active or implicit constraints on action as a results of prevailing socioeconomic and political conditions (Brooks and Stritch 1991; Falkner 2008; Flyvbjerg 1998; Fuchs 2007; Levy 2012; Levy and Newell 2005; Macdonald 2007)	Decision making power residing with, or being retained by, the state
		f. Limits of consensus
		p. The structural bias of capitalism of implications thereof
		q. Governments favouring specific actors

Dimension of Power	Potential Predicted Consequence of Power	Specific Concern for Collaborative Approaches
Discursive Power	Privilege as a function of discourse, control over discourse (Cook, <i>et al.</i> 2013; Culley and Angelique 2011; Falkner 2008; Fuchs 2007; Levy and Newell 2005)	t. Who is, or is not, favoured by the dominant discourse
		u. Efforts to control discourse
		v. Prescription of a 'language' of collaboration
		w. Dominant, hegemonic themes or values related to capitalism influencing collaboration
		x. Groups having to self-censor to participate

Methods

A systematic review was used to explore the extent to which literature addressing collaborative approaches to water governance accounts for issues of power. Systematic reviews are structured literature reviews that are useful in reviewing large bodies of material, synthesizing major findings and identifying knowledge gaps. In this paper, a protocol suited to social science inquiry is used (Petticrew and Roberts 2006).

Restrictions on materials and parameters searched were used to limit the range of articles returned to a reasonable number. This reflects a compromise between an ideally “sensitive” study, and a practically feasible “specific” study (Petticrew and Roberts 2006). To summarize inclusion criteria:

- The search was restricted to articles published in English.
- The study focused on journal articles rather than books, book chapters, reports and other kinds of literature because core research on collaboration for environmental governance is usually published in article format. Of the books that are published on the topic, many authors also choose to present their most salient findings in article form (e.g., Gunningham 2009; Holley, *et al.* 2012).

- Two journal indices (Scopus and Web of Knowledge) were used to build the database of articles. These two indices provided the broadest and most complete coverage of literature published on collaboration, environmental problem solving and governance.
- The search was restricted to titles, abstracts and keywords. These fields were searched for a range of terms that broadly encompass water, governance and collaboration (see Box 1).
- Searches were limited to articles published in the fields of arts, social sciences, business and multi-disciplinary fields – excluding only items published in purely natural science or engineering periodicals.
- Finally, dates were restricted to articles published between 2009 and January, 2013. This captured recent literature that could potentially have incorporated advances in theory and practice from the power literature.

Box 1: Database search terms

Keywords, Titles and Abstracts:

collaborat* AND
governance OR manag* OR plann* AND
water* OR catchment* OR basin* OR river* OR lake* OR stream* OR groundwater OR
"ground water" OR flood* OR irriga* OR drainage OR hydro-electric OR hydro-power OR
hydropower OR hydroelectric OR hydrolog* OR hydro-log*

The Scopus search returned 368 articles. These were manually examined to limit articles to those focused on collaborative approaches to water governance. This included governance processes addressing water issues and either self-identifying as collaboration, or characterized by broad stakeholder inclusion, face to face interaction, facilitated deliberation and negotiation,

knowledge and resource sharing, open, equitable communication, and a desire for consensus or near consensus (or a majority of these factors). Application of these criteria narrowed the study pool from the Scopus scan to 51 relevant articles. The ISI Web of Knowledge scan returned 31 articles of which 19 met the criteria. Accounting for overlap with the Scopus scan, the database for the systematic review contained 57 articles. Broken down by year, there were 20 articles in 2009, 13 articles in 2010, 10 articles in 2011, 10 articles in 2012, and one article as of January, 2013, when the search was completed. Thirty-two journals were represented with articles addressing mainly watershed or regional scales in North America, Europe, Australia and New Zealand. Representation was strongest in *Environmental Science and Policy* (n=7), *Journal of Environmental Planning and Management* (n=6), and *Society and Natural Resources* (n=5).

The full content of each article in the database was manually analyzed in order to answer the following research question: *how, and to what extent, does the literature on collaborative approaches to water governance address issues of power as defined by the conceptual framework?* The conceptual framework (Table 1) identified power proxies that were used to initially code each article; use of this framework satisfied the requirement for coding based on a rigorous analysis of multiple relevant studies (Petticrew and Roberts 2006). Proxies were necessary in order to ensure relevance and completeness of the review because power and power theory are rarely referred to directly in literature on collaborative approaches to water governance. For example, it was common for authors to mention the extent to which specific actors were included or excluded, but to not recognize that this could reflect power, let alone structural power (Table 1). At the same time, authors of collaborative water governance articles did not have to specifically reference power in order to demonstrate a clear understanding of the ways that power affects collaborative processes. The coding scheme also allowed for different perspectives on power to be captured, for example, power as productive versus power as corrupting. Hence, the proxies in Table 1 allowed for the many ways in which power could be

implicitly or explicitly addressed to be captured. Importantly, while the coding process began from a deductive perspective (based on insights from power literature as synthesized in Table 1), emergent themes revealed during the course of coding were also incorporated. Following initial coding based on the initial deductively-developed framework, all articles were re-coded a second time to account for inductively refined codes. The refined codes are presented in the next section.

QSR NVivo10 was used to organize and conduct coding. There was frequently overlap between categories (e.g., limits of consensus can refer to issues of either structure or discourse). Therefore, articles were carefully read to determine context and the depth of attention to power. In cases where overlap between categories was unresolvable, the passages in question were coded for both dimensions of power. Coding in all cases required informed judgment in order to ensure that attention to power was noted where present, even in the absence of direct reference to power or power theory.

The proxy codes were able to capture the existence of attention to specific issues but were unable to address the depth of attention given. For example, noting that collaboration was instigated and framed by a local government agency (codes “e” and “g” in Table 1) is quite different from noting these issues and then acknowledging their interrelationships with inclusion, development of policy options, and information used. For this reason, coded articles were analyzed for depth of attention and grouped into five categories according to the extent to which they acknowledged power concerns: None, Minimal, Partial, Strong, and Very Strong. The basis for placing each article in these categories is incorporated in the table that presents the results (below).

Other parameters with potential explanatory value were also tracked. This was done in order to determine if specific variables accounted for attention to power. References to power in general or generic terms, and to power from a theoretically-informed perspective, were tracked. Articles were also coded according to developed or developing country contexts, and for attention

to Indigenous contexts. Tracking attention to Indigenous concerns allowed examination of the extent to which power is addressed in contexts where significant power imbalances have historically been acknowledged. Considerable research has been undertaken addressing collaborative water governance in the European Union under the Water Framework Directive (WFD) and in the California Delta Bay region under CALFED. Articles addressing these initiatives were tracked to determine if focused, situated study has led to a broader examination of power.

Coding of articles, even using a well-specified coding structure such as the one presented above, is inherently subjective. To limit subjectivity, another researcher was asked to analyze two randomly selected articles from the pool of 57 using preliminary deductive codes from Table 1. Differences in interpretation of codes were resolved through discussion and negotiation, resulting in some adjustment. This person then applied the revised codes to 10 randomly selected articles. The results were compared to the coding of these same articles by the first author. While there was some minor variation with respect to the exact text coded, final article classification by both researchers was consistent (e.g., None, Minimal, Partial, Strong, and Very Strong).

Results

Tables 2 and 3 present the results of the systematic review. Power was not addressed in 32% of articles, addressed minimally in 39%, partially addressed in 19%, strongly addressed in 4% and very strongly addressed in 7% (Table 3). While 44% of articles mentioned “power” specifically, it was relatively common for authors to note power as an issue without engaging in any (4%), or much (19%), deeper analysis. For example, in their study of mega-region governance focused on water planning in California, Innes, *et al.* (2011:59) make reference to the fact that “[if] they are networked within themselves, information, social capital, and power can flow through the system rapidly”. Power is directly referenced, but coding for proxies revealed

that attention to power largely addressed two issues: government retention of power and inclusion. Acknowledging power as an issue does not necessarily account for the many impacts of power on collaborative approaches to water governance and its outcomes.

Table 2: Proxy Power Codes and Number of Articles Containing Codes (n=57 articles)

Category and (%) of Articles	Specific Codes for Each Category	Number and (%) of Articles
Instrumental Power (47%)	a. Coercion, co-optation, diversion, manipulation, misinformation	10(18%)
	b. Ensuring meaningful or equal participation through facilitation	9(6%)
	c. Imbalance of financial resources	10(18%)
	d. Unequal capacities (technical, social, institutional, etc.) to participate	20(35%)
Structural Power (70%)	e. Who instigated collaboration	11(19%)
	f. Limits of consensus	8(14%)
	g. Problem definition or framing and/or agenda setting	16(28%)
	h. Inclusion or exclusion of important actor groups	28(49%)
	i. Decision making power residing with, or being retained by, the state	19(33%)
	j. Governments initiating tokenistic processes that exist to generate legitimacy instead of to influence decisions	8(14%)
	k. Appropriate/inclusive use of knowledge	18(32%)
	l. Elite level relationships	12(21%)
	m. Lobbying external to the collaborative process	2(4%)
	n. Control over information production and use	1(2%)
	o. Backgrounds of representatives (e.g. evidence of revolving doors)	3(5%)
	p. The structural bias of capitalism of implications thereof	12(21%)
	q. Governments favouring business interests	5(9%)
	r. Governments favouring non-business interests	7(12%)
	s. Collaboration being influenced by external political contexts	18(32%)
Discursive Power (19%)	t. Who is, or is not, favoured by the dominant discourse	4(7%)
	u. Efforts to control discourse	1(2%)
	v. Prescription of a 'language' of collaboration	4(7%)

Category and (%) of Articles	Specific Codes for Each Category	Number and (%) of Articles
	w. Dominant, hegemonic themes or values related to capitalism influencing collaboration	8(14%)
	x. Groups having to self-censor to participate	3(5%)

Table 3: Classification Scheme for “Depth of Attention to Power” and Number of Articles in Each Category (n=57 articles)

Depth of Attention and Number and (%) Recognition Overall	Description – Article falls into one of the following categories	Number and (%) of Articles
None 18(32%)	No acknowledgement of power	18(32%)
Minimal 22(39%)	Identification of power as an issue without further discussion or analysis	2 (4%)
	Attention in some depth to at least one instrumental or easily visible structural aspect of power (e.g. resource imbalances) (codes “a” through “k”)	5 (9%)
	Attention to two or more aspects of instrumental or easily visible structural power in lesser depth (codes “a” through “k”)	7 (12%)
	Incomplete reference to at least one issue of hidden structure or discourse (codes “l” through “x”)	8 (14%)
Partial 11(19%)	Well thought out acknowledgement of power as an issue but incomplete attention throughout	3 (5%)
	Attention to at least one issue of hidden structure or discourse but without thorough discussion or analysis	8 (14%)
Strong 2(4%)	Demonstrated recognition of instrumental, structural and discursive power, their relationship and the impact they have on the collaborative processes under discussion – significant gaps still exist	2(4%)
Very strong 4(7%)	Well thought out discussion of all aspects of power, and recognition of power as an issue	4(7%)

Even among articles rated as “strongly” or “very strongly” acknowledging power (Table 3), it was uncommon for the word “power” to be used. This reinforces the importance of analyzing

power through its proxy expressions rather than simply by searching documents for direct references to power. For example, Gambert (2010:477) “very strongly” addresses all dimensions of power in his study of local government involvement in WFD-related initiatives in France and England, but only once uses the term “power”.

Only three of the articles analyzed explicitly addressed power using insights derived from power theory (e.g., Gaventa 2006; Haugaard and Clegg 2009; Lukes 2005). Two of these articles were classified as very strongly addressing power (Pares 2011; Shilling, *et al.* 2009), and another made reference to the fact that attention to power from a more theoretical perspective is a gap to be addressed (Taylor and de Loë 2012).

Fifty two articles addressed developed country contexts, three addressed developing country contexts and one article addressed both. Indigenous contexts were addressed in four articles. Articles addressing both Indigenous and developing country perspectives all had at least ‘minimal’ attention to power and made up a proportionally large number of those articles “strongly” or “very strongly” addressing power (40%) given that they represented only 12% of articles. This supports the suggestion that power issues may be addressed more commonly in these settings than in others where collaborative approaches for addressing water problems are used.

Concerns relating to instrumental power appeared in 47% of articles, most often in the context of unequal capacities to participate (35%) (Table 2). The most commonly identified type of power overall was structural power (70%) and the majority of commonly applied codes were structural. These included “h. inclusion or exclusion of important stakeholder groups” (49%), “i. decision making power residing with, or being retained by, the state” (33%), “k. appropriate/inclusive use of knowledge” (32%), and “s. collaboration being influenced by external political contexts” (32%) (Table 2).

Because structural power is a very broad category, subcategories were identified as “easily visible structural power” (codes “e” through “k”, 68%) (e.g., who instigated collaboration), “hidden structural power” (codes “l” through “r”, 44%) (e.g., elite level relationships), and “direct reference to external political influence” (code “s”, 32%). External political drivers were distinguished from other forms of structural power because they can either be hidden or visible depending on context, and because of the specific ways they influence collaboration. This category would often appear in articles that exhibited no other attention to power. For example, despite not specifically addressing power in his analysis of agricultural water use in the context of CALFED, Fuller (2009:672) states the following in the final paragraph:

Like any element of a long and difficult policy process, the agreements made in consensus building processes are not the final step. Much can change in implementation, as it did in CALFED, especially when an administration changes. Despite the strong stakeholder support for the Program, the incoming Bush administration and Congress never provided the financial support promised by their Clinton-era predecessors.

This statement clearly acknowledges the influence of factors operating external to the collaborative process at the *implementation* phase. However, the analysis does not consider these kinds of power-related issues in the context of the collaborative process itself.

With respect to hidden structural power, the most frequently identified issues were “l. elite level relationships” (21%), and “p. the structural bias of capitalism of implications thereof” (21%), (Table 2). Recognizing that the implications of capitalism can be broadly defined depending on perspective, this code was restricted to instances that addressed situations tangibly shaped by economic factors. For example,

In the context of water management, water supply infrastructure organizations, with their links to economic development... are traditionally viewed as the actors with the largest stake in the status quo and the most power to influence bargaining over the gains from cooperation (Lubell and Lippert 2011:78)

Discursive power was the least frequently recognized (19%) and, as suggested earlier, presented coding challenges. For example, passages coded for structural bias related to capitalism, discussed above, were often also coded for the most commonly identified discursive theme, “w. the discussion of dominant, hegemonic themes or values related to capitalism” (14%). This reflects the many ways that dominant economic structures can shape language, ideals, values and resultant tangible actions. To illustrate, the following passage was coded for both structural and discursive issues:

solutions such as the [Environmental Water Account], which appear to collaboration scholars as innovative and consensual...are seen instead as an expansion and legitimization of the dominant market logic and language to the environmental realm, perpetuating past injustices (Kallis, *et al.* 2009:639).

Discursive power was also more likely to be addressed in articles focused on either the EU WFD or CALFED. Of articles returned, 12 addressed either the WFD or CALFED. Of the four articles that very strongly addressed power, two addressed the WFD and one addressed CALFED. The fact that these settings have received sustained attention from collaboration scholars may account for this pattern – but this finding is not conclusive.

Discussion

The analysis revealed that many authors of studies relating to collaborative approaches to water governance are addressing power-related concerns in their work, and are aware of the

importance of power for these processes. However, gaps remain related to hidden structural and discursive power. Furthermore, many authors are not explicitly identifying the relationships between different types of power, as evidenced by the fact that 71% of articles addressed power below a “partial” level. In some cases this appears to have been an oversight. For example, in their synthesis of decades of work on collaboration, Innes and Booher (2010:108-112) dedicate several pages to the implications of power for collaborative processes. The fact that this understanding was not fully captured in the article included in this review (Innes, *et al.* 2011) highlights the value of a more structured, explicit approach to the examination of power in collaboration for environmental governance. At the same time, findings such as this reveal opportunities for strengthening understanding of the role and influence of power in collaborative approaches to water governance. These are discussed below.

Instrumental Power

Issues related to instrumental power were addressed relatively infrequently considering that they tend to be quite obvious. One possible explanation is that strategies for dealing with instrumental power have been well developed, are easily implemented, and are now commonly reflected in process design. For example, effective facilitation and equitable participation are now common process characteristics adopted in order to address issues of coercion, co-optation, manipulation and misinformation (Ansell and Gash 2007; Parkins and Mitchell 2005).

Structural Power

Given that power is difficult to address and often hidden, it is unsurprising that the literature analyzed in this review focused mainly on visible expressions of power within collaborative processes. The prevalence of attention to visible structural power is likely due to the fact that many of the criteria that are emphasized as fundamental to collaborative approaches to environmental problem solving are issues of structure that are challenging to address in terms of

implementation (e.g., the inclusion or exclusion of stakeholders). At the same time, the results indicate that, despite concern for these kinds of issues, very few authors are either implicitly or explicitly making the link between expressions of power and the broader ways that power shapes policy outcomes. For example, while a number of authors recognize the importance of ensuring inclusive, equitable representation (e.g., Borisova, *et al.* 2012; Marshall, *et al.* 2010; Watson, *et al.* 2009), addressing barriers to participation in collaborative processes also requires addressing deeper issues that broadly prevent marginalized parties from having a real voice in society. To illustrate, Shilling *et al.* (2009:698), in reference to CALFED, note that “there have been various mechanisms for exclusion and denying access, including language, arbitrary legitimization of knowledge, cultural practices of interaction among those in power, and class”. These are issues that transcend the problem arena and are perpetuated and reinforced at multiple scales.

The disconnect between collaborative processes and broader power patterns invokes issues of scale because many of the problems expressed at the process level do not necessarily have corresponding solutions at that level but are rather reflective of broader societal power imbalances. Identifying strategies to address the issues revealed by a power-based analysis thus demands that collaborative process researchers, designers and implementers examine scales beyond the immediate problem arena (Clare, *et al.* 2013; Cook, *et al.* 2013).

The relative prevalence of articles noting the influence of external political factors indicates that many scholars are aware that the success of collaboration is at least partly determined by conditions external to the actual collaborative process. To some extent, the need to consider broader scales also explains why literature addressing large regional initiatives such as CALFED and WFD-initiated processes addressed power more effectively. Many lobbying and influence efforts take place at these regional or national scales (Gambert 2010) and are thus more likely to be captured within analyses of these collaborative processes. As well, both CALFED and the WFD have been extensively studied and, as many of the possible barriers to collaboration have

been explored and yet failed to result in markedly effective processes, it has become necessary to consider the broader reasons why such barriers continue to persist (e.g., Gambert 2010; Kallis, *et al.* 2009; Pares 2011; Shilling, *et al.* 2009).

Discursive Power

Comparatively little attention to discursive power is not surprising since identifying this type of power involves moving beyond easily observable expressions and digging deeply into how, and by whom, influence is exerted (Lukes 2005). The most common discursive issue identified was the influence of dominant, hegemonic themes. Pares (2011:462) provided one example of the way this theme arose:

even if several civil society organizations take part in these forms of governance, there is a tendency to lose democratic control in these networks, while the power and influence of social and political-economic elites grow in a strategy to re-centre the regulatory force of the market as the main organizer of social relations.

Of concern is that collaboration is espoused precisely because of its purported ability to equitably represent the interests, knowledge and contributions of all stakeholders. Unaddressed issues of power can prevent this from happening, and thus hamper our understanding of why collaboration may not be returning the improved social and ecosystem conditions that it is intended to achieve. This may explain heightened awareness of power in literature addressing developing country and Indigenous perspectives. These contexts have frequently been examined through the lens of power and scholars working in these fields commonly are already attuned to power issues and are more comfortable using power theory (e.g., Takeda and Ropke 2010).

Strategies for a better accounting for power

Because of the pervasive nature of power, an effective accounting will require a significant shift in how collaborative process analysis and design is approached. When power is considered, the analytical frame inevitably expands to include larger socioeconomic and political trends over multiple spatial, institutional and temporal scales (Clare, *et al.* 2013; Cook, *et al.* 2013). This introduces a number of complicating variables that must be accounted for in characterizing and assessing collaborative cases. Adapting to this increased complexity may best be achieved using a graduated approach.

Openly acknowledging that power-related issues exist is a first step toward establishing if and how they matter in terms of collaborative governance processes and outcomes. Considering power in the context of collaboration allows for a more realistic view of what collaborative processes can accomplish under existing socioeconomic and political conditions, and how best to approach collaboration in contested settings. For example, applying a power-based analysis may reveal that an industry participant has existing structural privilege and elite-level connections that permit this actor to effectively exercise veto power at the policy approval or implementation stage. In such a situation, engaging in collaboration for the purposes of making or informing policy will likely be ineffective (Clare, *et al.* 2013).

Using a power lens also has the potential to identify ways that power relationships can be shifted through collaboration – a potential outcome highlighted by others (e.g., Ansell and Gash 2007; Innes and Booher 2010). For example, Pares (2011) noted that some groups chose not to participate in collaborative processes under the European Water Framework Directive because doing so would require accepting a contested world-view and language. In such cases, designing processes to include collaborative agenda setting and problem definition may help include diverse actors, knowledge and perspectives, and could support the transformative potential of collaboration.

Ultimately, the results of the review reveal that there is no standard approach for addressing power in collaborative approaches to governance for water. The literature will be strengthened by the development of frameworks that allow for easier communication through common definitions and measurement metrics. Frameworks that provide tangible potential expressions of power, such as those presented in Table 2, also make the complicated concept of power more accessible and usable (Fuchs 2007). This is especially important for researchers who are not necessarily, nor strive to be, power scholars. Empirical research designs will better acknowledge and address power-related concerns if the issues highlighted in Table 2, specifically with respect to structural and discursive power, are incorporated into case descriptions. This will make it easier to integrate power expressed in broader socioeconomic contexts into analyses. Existing literature on the application of theories of power to natural resource contexts can also provide further insight into the application of power theory to collaboration addressing water and environmental governance (e.g., Caine and Krogman 2010; Raik, *et al.* 2008).

Explicit steps for more effectively accounting for power in the study and design of collaborative approaches to water governance include applying, or constructing, a range of power-related queries (e.g., Table 2) that will help reveal significant power issues in cases under examination. Many power issues reflect conditions external to the collaborative process; these issues can be identified and addressed, although not necessarily resolved, at the collaborative group scale. Specific attention should be paid to the following concerns:

- *Determining how, and by whom, collaborative agendas are set.* This will help reveal if actors are excluded, whether control is being exerted to shape agendas in favour of specific interests, and whether decisions on important issues are being restricted.
- *Understanding the financial, technical and institutional capacities of actors and how they are utilized both within, and external to, collaborative processes.* This

includes factors such as lobbying, elite political access, the ability to devote time and money to collaboration, and the ability to use public media as a tool.

- *Revealing the knowledge, information and perspectives that are used and valued.*

Scholars can use this information to determine if these inputs and framings sufficiently reflect the interests of all collaborative actors.

- *Determining the prevailing orientation of state bodies with final decision-making power, and dominant societal values in the context in question.* For example, collaboration in regions governed by ideologically neoliberal governments are likely to favour business interests in ways that may not adequately give voice to environmental or social interests.

The results of such queries can then be used to direct attention toward potentially significant power issues for the context in question. In the presence of such issues, such as a collaborative context characterized by the presence of a single powerful sector or interest, analysis should clearly acknowledge, and account for the impacts of, the presence of these power issues.

Conclusion

Collaboration is increasingly being used to address contemporary environmental problems. Considering power, and the different ways it is expressed, is a useful way to make visible and link together many of the factors shaping collaborative processes and outcomes. The systematic review reported in this paper was based on an explicit power framework grounded in a mainstream power theory perspective. It revealed that recent research on collaborative approaches to water governance is accounting for many visible consequences of power. Nonetheless, there is considerable room for increased understanding of hidden forms of structural and discursive power, and the interrelated ways these forms of power affect collaborative systems. Future research in this area will be useful.

Examining power through the framework used here expands the scale of analysis from the collaborative group itself to include broader, socioeconomic and hegemonic factors that shape collaborative processes and outcomes. This addresses a challenge identified in the literature related to the need to identify and account for such factors across political and geographic scales (Emerson, *et al.* 2012). Meeting this challenge is important because the success or failure of collaborative approaches to environmental problem solving is closely linked to a host of power-related considerations. Explicit attention to power recognizes that collaborative processes do not exist in isolation. Instead, they are nested within broader social, political and economic contexts that shape processes and outcomes in ways that are often pervasive and hidden (Lubell and Lippert 2011; Memon and Kirk 2012). Theorizing, designing and conducting collaboration in the absence of attention to power risks incomplete understanding of how and why processes progress and produce outcomes, successful or otherwise. This paper explored power in collaborative approaches to water governance. However, the issues explored here are equally relevant in other settings where diverse actors come together to address shared environmental problems.

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