Participation in Multiple Decision Making Water Governance Forums in Brazil Enhances Actors’ Perceived Level of Influence

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The Ecology of Games Framework (EGF) draws attention to the intertwined nature of different forums in a given policy setting and how this affects governance outcomes. In this article, we associate the EGF with the literature on power asymmetries, in order to investigate hypotheses of actors’ perceived level of influence in a forum. Focusing on the Paraíba do Sul river basin committee in Brazil, we specifically explore actors’ participation in multiple forums, time spent participating in the basin committee, and actors’ degree of involvement in the committee as factors that might explain actors’ level of perceived influence in the forum. The findings suggest participation in multiple forums is a key driver of perceived influence and thus highlight a way to challenge traditional power asymmetries. More research, however, is needed to determine to what extent perceived influence is affecting decision-making processes and governance outcomes in the Paraíba do Sul river basin committee.

KEY WORDS: ecology of games, water governance, power, participation, Brazil, forum

Introduction

Recent work on the Ecology of Games Framework (EGF) is rooted in the empirical observation that most contemporary environmental governance systems are characterized by the existence of a multiplicity of overlapping decision-making forums (Lubell, 2013). So far, this literature has mainly discussed whether institutional complexity increases or hinders cooperation and has focused on cases in the...
Global North (Lubell, 2013), albeit with some recent exceptions (Berardo, Olivier, & Lavers, 2015). In this paper, we seek to understand whether the existence of participatory forums, which provide multiple entry points into the governance system in an Ecology of Games, can (if utilized) help actors to be perceived as more influential in the system. Our study was conducted in the Global South, in the context of river basin management in a highly populated region of Brazil. Additionally, this paper explores whether a stable institutional structure that has provided diverse stakeholders with opportunities to participate in a water-related governance forum over the course of more than two decades has potentially challenged the concentration of power that traditionally rests in the hands of government entities and large private water users—i.e., the holders of formal authority and of economic resources (Abers & Keck, 2006).

In an attempt to link the literature on power asymmetries in governance arrangements with recent work on the EGF, we investigate whether a series of key factors related to participation, including participating in several different forums, may help explain which actors are considered influential by others. We use influence rating as a proxy for reputational power, a well-established measure in diverse areas of political science (Henry, 2011; Ingold, 2011; Sciarini, Fischer, & Traber, 2015). Investigating what makes actors influential, or not, is particularly important for uncovering the links between participation and power dynamics in governance. If influence can be at least partly explained by actors’ participation strategies, then less powerful actors may be able to utilize participation as a means to achieve greater influence; participation strategies are open to all, not only conventionally powerful actors holding formal authority and economic resources. Therefore, in empirical governance systems where participation is a real possibility, one might expect to find actors across a range of sectors—especially historically less influential sectors in environmental governance, such as civil society—that have adopted participation strategies designed to increase their influence. In other words, if influence is at least partly tied to participation strategies and not only to attributes of the actors themselves, then actors should be able to utilize participation to become more influential. This subsequently suggests that in a system where participation is a viable option for diverse actors to engage in decision making, power would not exclusively be in the hands of government entities and resource-rich private actors, as often assumed in the literature (Dahl, 1994; Furlong, 1997; Yackee & Yackee, 2006).

We explore these topics using data on participation in water management forums in Brazil, a country with well-documented power imbalances in natural resource management (Abers & Keck, 2006; Ioris, 2009). The literature highlights how the risk of powerful private actors capturing participatory forums is often higher in countries in the Global South, where government entities do not always hold sufficient authority in practice (Abers & Keck, 2009). In the specific region of Brazil that we study, the hydroelectric sector historically played the largest role in managing rivers until the implementation of participatory decision-making forums for water management. These forums were implemented in Brazil at the basin, state, and national levels beginning in 1992, and constituted a fundamental reform of the system (Abers & Keck, 2006; Kumler & Lemos, 2008). This paper specifically focuses on the case of the
Water Basin Committee for the Paraíba do Sul river (CEIVAP),¹ which flows through the states of São Paulo, Rio de Janeiro, and Minas Gerais. This forum was founded in 1996 and is the oldest of Brazil’s federal water basin committees, which were established specifically to manage the country’s interstate river systems. It was also the first forum in which water pricing schemes were implemented (Abers & Keck, 2006; Ioris, 2009); importantly, this provides the committee with its own budget.

We used a mixed methods approach for data collection in this study, combining a survey with open-ended interview questions. Using the survey data, we perform multivariate regression to quantitatively analyze why some actors were perceived as being more influential in CEIVAP. We use the qualitative data to further substantiate the findings of the quantitative analysis and discuss them in a longitudinal context, as some of our interviewees had been involved in the process of founding the committee and shared their perceptions of the forum’s evolution in the last 20 years. Specifically, this paper focuses on the two following questions:

1. Which actors are considered influential, and in particular, are there any actors from civil society that are also considered influential?  
2. Are there factors related to participation that could explain why some actors are considered more influential than others, and if so, which ones?

The remainder of the paper is organized as follows: First, we put the relevant literature on the EGF into dialogue with the literature investigating power dynamics within participatory instances of collaborative governance; next, we describe the pertinent details related to the empirical context, followed by descriptions of the data collection and analytical methodologies. Last, we present the findings and discuss their implications for further development of the EGF.

**Theoretical Framework**

Recent work on complex environmental governance systems has led to the development of the Ecology of Games framework (Berardo & Lubell, in press; Lubell, Henry, & McCoy, 2010). The overarching hypothesis of the EGF is that the institutional complexity of a system—i.e., the presence of multiple independent, but functionally interdependent, forums that constitute the system—affects actors’ interactions and their strategies for advancing their agendas, as well as the collective and individual outcomes these interactions produce (Lubell, Robins, & Wang, 2014; McAllister, McCrea, & Lubell, 2014; Scott, 2016; Smaldino & Lubell, 2011, 2014). This approach resonates with other research building on the concept of polycentricity, such as the idea of “networks of adjacent action situations” put forward by McGinnis (2011). Research on the Ecology of Games has additionally explored the effect of forum participation on actors’ perceptions of procedural fairness and policy satisfaction (Lubell, 2013; Lubell, Mewhirter, Berardo, & Scholz, 2017). Recently, scholars have also begun to pay attention to actors’ relative power positions within an Ecology of Games (Scott & Thomas, 2017). In this paper, we pursue this latter line of inquiry and seek to
understand whether complex governance systems might provide new possibilities for actors to gain influence.

We specifically focus here on the role of participatory forums, which we take to represent organized and clearly articulated games where participation takes place, similar to “collaborative institutions” in the language of Lubell et al. (2010). We borrow the definition given by Newig et al. of participatory governance as “processes and structures of public decision making that engage actors from the private sector, civil society, and/or the public at large, with varying degrees of communication, collaboration and delegation of decision power to participants” (Newig, Challies, Jager, Kochskaemper, & Adzersen, 2017, p. 5). We similarly prefer the term participation to collaboration, as collaboration more aptly describes one of the possible forms of interaction within participatory forums. Most importantly, participation “stresses the involvement of actors who are not normally charged with decision making” (Newig et al., 2017, p. 4). We do, however, acknowledge that the literature does not consistently follow this distinction and that the term collaboration might still be appropriate here, particularly as it conveys the presence of actors representing organized interests.

The critical literature on participatory governance has called attention to the importance of power dynamics in decision-making forums (Cornwall & Coelho, 2006; Singleton, 2000), but has not sufficiently explored the effects polycentric governance systems with multiple entry points for participation have on the capacity of different actors to exert influence. Indeed, the opportunity to participate in many forums may multiply the opportunity to exert influence over the system and allow participants to develop more complete knowledge of the workings of the system, which might put them in a better position to advance their interests. In this regard, one of the core purposes of this article is to put the critical literature on participation and the literature on the Ecology of Games into dialogue. Studying the effect that participating in different forums may have on power dynamics is an important contribution to the critical literature on participation in environmental governance. And conversely, the strategies that actors develop across forums in complex institutional systems cannot be fully understood if power dynamics are not taken into account. By merging these two bodies of literature we are able, in a theoretically informed way, to explore whether being present across multiple forums in complex institutional systems helps explain actors’ level of influence.

The critical evaluation of participatory institutions—what we refer to as forums—established in the 1980s and 1990s in the Global South called attention to the failures of participatory approaches in terms of achieving effective inclusion of all stakeholders (Cooke & Kothari, 2001; Hickey & Mohan, 2004). This literature argues that participatory forums need to be understood in the context in which they are implemented, not in isolation (Abers & Keck, 2004). It further emphasizes the power asymmetries embedded in such institutional contexts (Barnaud & Paassen, 2013; Becu, Neef, Schreinemachers, & Sangkapitux, 2008; Daré & Barreteau, 2003).
We follow Akbulut and Soylu (2012) in defining power as “the ability of individuals or groups to influence the agenda and final policy choice” (p. 1146), and thus we use influence as an indicator of power. Exploring this issue in the case of participatory forums requires acknowledging different stakeholders are likely to come from different positions of power prior to joining these forums. Concretely, this means some actors might be more able to influence the outcome of the participatory process, which challenges the idea of equal participation on which these forums are based (Barnaud & Paassen, 2013; Muñoz, Paredes, & Thorp, 2007; Sikor & Nguyen, 2007).

By bringing in the EGF perspective on interconnectedness among a multiplicity of forums, we propose a way forward for investigating the effects of complex institutional systems on power distribution in governance. Through this approach we pose new questions to further investigate the results of previous studies on the dynamics at play in Brazilian water governance arrangements. Particularly, Abers and Keck (2004) argue that water basin committees in Brazil need to establish links with other governance structures in order to fulfill their purpose of furthering democracy and increasing managerial effectiveness. We propose a concrete way to investigate the effects of such links on perceived influence, paying close attention to the way influence is linked to participation strategies. It is particularly interesting to explore whether this is the case for actors representing less powerful sectors, such as representatives from civil society. Previous studies explain how the implementation of participatory decision-making forums for water governance in Brazil faced resistance from traditionally powerful actors, who feared losing their power as the result of the changes introduced (for further details see Abers & Keck, 2006; Lemos & Oliveira, 2004). It is thus important to investigate if actors representing sectors that have traditionally been excluded from management are among the most influential in the current institutional system, and what elements can help us understand the links between influence and participation.

**Hypotheses**

Drawing from the emerging Ecology of Games literature, we formulate two hypotheses. A key debate in the EGF literature is whether actors should concentrate their efforts in one forum, or divide their efforts among several forums, considering the limited amount of time and resources available to each actor. Even though the existence of multiple forums might reinforce existing or emerging power asymmetries (Scott & Thomas, 2017), attending multiple forums might still provide more opportunities for less influential actors to increase their impact. By attending multiple forums participants might get access to a higher number of actors, since not all actors attend the same forums. Access to a diverse set of actors might provide opportunities to gain knowledge on initiatives or issues in diverse contexts that each actor can then use in their own context of interest. Attending multiple forums might give actors a holistic view of the system by being able to understand which forums
are more focused on which tasks, or in which forums different actors invest their 
time and resources. Having these insights might make actors appear knowledgeable 
of the system in the eyes of others, which might help them increase their influence. 
Participating in other forums also provides an opportunity to deepen relationships 
with those actors that attend some of the same forums and thus learn about their 
strategies, main concerns, strengths, and weaknesses. This in turn might facilitate 
the building of coalitions across forums and provide opportunities for certain actors 
to assume liaising roles between forums. Accordingly, we hypothesize that:

_Hypothesis 1: The more forums an actor attends, the greater their influence._

Not all forums are equal (Lubell et al., 2010, 2017). Different forums have dif-
ferent objectives and different sets of resources at their disposal. We hypothesize 
that the specific characteristics of other forums attended might have different 
effects on influence in a given forum. What this hypothesis attempts to tease out 
is whether participating in diverse types of forums provides actors with different 
opportunities and, depending on the type of forum, whether some of these forums 
might be more important than others in order for participants to be perceived as 
influential.

On the one hand, being part of state-based forums (see Appendix A for contex-
tual details), can provide actors with greater influence because they are closer to 
legislative power centers and state environmental or water management agencies. 
These forums are concerned with legislation in the state, hence they focus on issues 
across watersheds. Yet by being closer to state agencies these forums might provide 
opportunities to directly influence decision makers and politicians. The meetings 
of state-based forums are typically held in the capital of the state, sometimes even 
in the very building where state agencies are located. Such a central location might 
attract more powerful actors; capital cities tend to be political, economic, and admin-
istrative centers, which is not necessarily the case for the basin cities in which water 
basin forums typically have their offices.

On the other hand, participating in other water basin committees provides 
opportunities to learn about initiatives taken in other forums that can then be applied 
in the given forum, such as tools to implement water payment schemes or envi-
ronmental education and outreach activities. Specifically participating in sub-basin 
forums provides a tailored set of skills related to knowledge and information on 
local topics and concrete initiatives. It might also provide access to certain actors that 
are less involved in higher-up forums, such as small municipalities or local environ-
mentalists. Having access to these actors by participating in local forums can be a 
source of influence for actors in higher-up forums, as these local actors are often seen 
as being representatives of local interests (Hamilton, Lubell, & Namaganda, 2018). 
Additionally, by participating in other water basin forums actors can get access to 
these forums’ funds and be involved in concrete projects in the sub-basin that might 
help them gain visibility.
For these reasons, we decided to differentiate basin-based forums from forums based on political boundaries between states, and note that these correspond to the two most relevant types of forums in our case (see case study description below). As such, we hypothesize that:

Hypothesis 2a: An actor that attends state-based forums has greater influence.

Hypothesis 2b: An actor that attends water basin (non–state-based) forums has greater influence.

In addition to these two hypotheses derived from the EGF, we present two other hypotheses, which could also be seen as controls, to acknowledge that an actor’s influence could be explained by other factors. First, the literature has highlighted the importance of considering actor participation over long-term time frames. This allows actors to acquire sufficient knowledge to be able to participate meaningfully and effectively in the system (Kumler & Lemos, 2008; Newig, 2007; Sandström, Crona, & Bodin, 2014), to form the necessary alliances to exert influence (Lund & Saito-Jensen, 2014), and/or to establish effective communication strategies (Jacobs et al., 2010). We hypothesize that:

Hypothesis 3: The longer the time over which an actor engages in the committee, the greater their influence.

Additionally, the literature has identified both time availability and willingness to be involved as important factors for obtaining benefits from participation and gaining influence. Indeed, one of the issues pinpointed as perpetuating exclusion is the lack of time available to more marginalized groups, who might not be able to leave their work to attend committee meetings, or who might need to travel greater distances using often inadequate transport systems (Altschuler & Corrales, 2012; Davies & White, 2012; Diduck & Sinclair, 2002; Lund & Saito-Jensen, 2014). Available time is, however, a necessary condition that only becomes meaningful when associated with an actor’s willingness to fully engage in participating in a forum. To explore the role of actor involvement on influence, we hypothesize:

Hypothesis 4: The more involved an actor is in the committee, the greater their influence.

We have synthesized the EGF with the literature on power in participatory forums to formulate a set of hypotheses that helps us investigate the workings of complex institutional systems. The case of Brazil presents a particularly suitable example to test these hypotheses as multiple participatory forums for water management co-exist at both the same and at different administrative levels (basin, sub-basin, state levels).
Case Study

The complex governance system we focus on here is the Paraíba do Sul river basin, which is spread across the states of Rio de Janeiro, Minas Gerais, and São Paulo (see Figure 1). The Paraíba do Sul basin covers an area of 56,500 km² and provides water for 17.5 million people. The main water uses are water provision for human consumption, sewerage (i.e., dilution of wastewaters), irrigation, and hydroelectricity generation. The river is also used for fishing, aquaculture, and tourism, although these account for a small fraction of its use. The river is under the jurisdiction of a federal committee that deals with the whole extension of the basin, which we focus on here, as well as seven smaller committees that cover different reaches and estuaries of the Paraíba do Sul river.

Most of the Ecology of Games literature has focused on describing the interplay between different forums at the system level. In contrast, we zoom in on one key policy institution, CEIVAP, and seek to understand how the system affects the dynamics at play in that institution. The federal basin committee of the Paraíba do Sul river is responsible for the comprehensive management of the river system. Indeed, some of its main competencies include: defining acceptable quality of the river’s water, determining rights of use, and establishing fees for water use, as well as approving and implementing the water resources plan for the basin.

The CEIVAP was created in 1996. Its statutes require that 40 percent of plenary members represent water users (industries, hydroelectric companies, agriculture,
provision companies, etc.); 35 percent represent government entities at the federal, state, and municipal levels; and 25 percent represent civil society organizations (associations, NGOs, universities). Furthermore, the representatives of these three categories are equally distributed between the three states. In addition to the plenary, the CEIVAP also has a technical chamber composed of six members per state—two of each representing water-users, government, and civil society—to which all organizations participating in the plenary can present candidates, who are then elected by the plenary itself for two-year terms. The internal regulations of the chamber specify these participants should be elected such that representation of all interests is maintained. The committee also has a number of working groups, which are constituted as the plenary sees fit. Additionally, the plenary elects a three-member directorate for two years, with one representative from each of the three stakeholder classes, and each from a different state. Representatives of government entities always hold the presidency, which rotates between the three states.

The water resources management legislation currently in place in Brazil was approved in 1997, through law 9433. This law, inspired by the principles of Integrated Water Resources Management (Pahl-Wostl, Jeffrey, Isendahl, & Brugnach, 2011), introduces five management tools through the National Water Resource Policy and the National Water Resource Management System. These tools are: the basin plan, authorization of water use, payment for water consumption, classification of desired water quality for each water body, and the Water Resources Information System (Elabras Veiga & Magrini, 2013). Besides the Water Basin Committees, Brazilian law creates Water Resources Councils at the state and national levels as well as State Water Resources Management Entities, which are the executive branch of the Water Resources Councils (for details on the competencies held by the main organizations participating in the water management system, see Appendix A).

The literature on water governance in Brazil has been mixed in its evaluation of participatory forums. In particular, some studies have been very critical of the capacity of these forums to include previously excluded actors (Ioris, 2009; Tankha & Fuller, 2010); others have been very positive on the collective benefits these forums can generate (Kumler & Lemos, 2008); and yet others have recognized both positive and negative elements of these forums (Abers, 2007; Brannstrom, 2004). The majority of this research dates back to the time of implementation of major policy reforms in the 1990s and 2000s, and in particular of the introduction of water pricing schemes (Abers & Keck, 2004, 2006; Keck & Abers, 2004; Kumler & Lemos, 2008). We believe it is important to study the system now, almost 15 years after the reform on water pricing which took place in 2004 (Abers & Keck, 2006).

Additionally, these studies give a general overview of participation and inclusion but do not provide concrete measures for understanding what such inclusion entails. We believe that by studying influence, and specifically by studying whether traditionally excluded actors hold influence alongside more powerful ones, we can begin to build more refined understanding of what type of inclusion can be achieved through participation in these forums.
Methods

The sample included in our quantitative analysis consists of the participants in CEIVAP’s plenary, provided that they fulfilled one condition: they must have attended at least two of the last six plenary meetings. Of the 59 formal members of the forum, 45 of them fulfilled this condition. Three of them refused to participate in the study, which gives us a response rate of 93 percent. Among those who were excluded from the sample were eight government entities (from multiple administrative levels), four representatives of private water-users, and two civil society organizations. Six of them come from Rio de Janeiro, five from Minas Gerais, and four from São Paulo. We are unable to provide more details for confidentiality reasons, but this list of absentees does not suggest a systematic exclusion of a specific group, or groups, in the study.

We presented respondents with the list of participants in the plenary of the committee and asked them to evaluate each participant on whether they saw them as being influential. Influence was evaluated on a 5-point scale, with 1 being “not at all,” 5 being “very much so,” and 0 indicating a participant was not known to the respondent. This produced a network-centric data structure, since the method used for data collection (recall list) is a method commonly used to collect data for network analysis.

We use influence perception here as a measure of reputational power. When introducing the question on influence, we explained to participants that an actor should receive the highest mark if they were perceived as being capable of determining the forum’s agenda, obtaining significant support for their position, convincing actors to attend or not attend meetings, and/or affecting other actors’ voting behavior. Participants were asked to give a single rating on influence taking into account these different factors. We assessed perceived influence based on the average rating from all actors who indicated they knew about the actor—i.e., we used a normalized measurement in which all zeroes in the responses were disregarded. As Fischer and Sciarini (2015) highlight, “reputational power is admittedly subjective and may thus lead to inaccurate evaluations. But even if an evaluation is inaccurate, the simple fact that ego believes that alter is powerful will lead ego to behave as if alter were powerful, which will indeed empower alter (‘self-fulfilling prophecy’)” (p. 181).

Additionally, we asked actors a series of questions about their participation in the water governance system that allowed us to develop a series of attributes and variables to further explore actors’ behavior and strategies. We asked participants to specify the number of years they had participated in the committee (hypothesis 3). We also asked them to list other forums in which they participated and discussed water management issues (hypothesis 1). The most common among these were other committees at the sub-basin level (hypothesis 2b) and state-based councils (hypothesis 2a) on water resource management. Although less common, other forums were mentioned, such as the National Council on Water Resource Management; a forum set up by a group of industries to discuss environmental issues; and a forum set up by several NGOs to discuss issues related to water quality. The highest reported number was nine forums.
Finally, participants were asked to assess the importance of their involvement in the committee for their work on a 4-point scale, with 1 being not important and 4 being a fundamental aspect of their work (hypothesis 4). For example, if participants’ work exclusively dealt with committee-related issues, they would attribute a 4 to their own involvement. It is important to note this variable was assessed based on self-reporting by each of the participants, not externally verified, which may constitute a limitation.

We also conducted extensive semi-structured interviews with participants in the CEIVAP plenary during which they could speak about their general views on the system of management, its problems, the progress made in the years the forum had been active, as well as the vision moving forward. In particular, we focused on exploring the relations between organizations as perceived by our interviewees. Additionally, we interviewed five other actors who were involved in the establishment of the committee and have been following its evolution since then. These actors include two academics, a former public officer, an environmental activist, and a former representative of a consortium of industries. The total amount of time spent with each individual participant ranged from 1 to 3 hours. Last, we attended and took notes at plenary committee meetings, meetings of the technical chamber, and some of the other forums attended by participants of CEIVAP. The qualitative data sought to capture the normal functioning of the committee, and we believe no extraordinary events that might affect data collection occurred in the months preceding fieldwork. In this paper, the qualitative data are used to elaborate, validate, contextualize, and expand the results of the quantitative analysis.

The qualitative data were imported into the NVivo11 software program and coded following an abductive thematic analysis (Boyatzis, 1998). We first drafted a summary of each interview, and in a second step we identified themes across the summaries. The identification of themes was guided by a list of key words from the literatures on the Ecology of Games, participatory institutions, and power dynamics. Additional codes emerging from the empirical data were also included (see Appendix C for the codebook and details on the coding procedure). The purpose of the coding was to facilitate the organization, exploration, and retrieval of the data, and to present their richness in a comprehensive way that fostered reflection on the themes present across interviews and on the results of the quantitative analysis.

We used multivariate regression to test if, and to what extent, the five independent variables in hypotheses 1–4 (i.e., number of forums attended; participation in other committees and participation in state-based forums; time in committee; degree of involvement) could explain influence. Perceived influence is constructed by drawing on a network-centric data structure, as indicated above. Thus, the characteristics of data interdependency in a network also apply to these data. Standard regression techniques can be problematic in assessing statistical significance when analyzing network data due to this potential interdependency, hence we made use of a node-level regression in the software UCINET (Borgatti, Everett, & Freeman, 2002) where significance levels are instead estimated based on a large number of permutations. This allows us to overcome the possible problems posed by data interdependency
importantly, the selected case is appropriate to test whether participation in other forums affects influence in a given forum. The CEIVAP is a committee that brings together three states and seven sub-basin divisions. Thus, actors participating in CEIVAP have a number of opportunities to take part in other relevant forums for the management of the basin, such as smaller sub-basin committees or state councils for water resources. Taking this into account, we specified the variables “state-based forums” and “other basin committees,” with the aim being to investigate whether the specific kind of forums attended had an impact on the influence actors obtained in CEIVAP. We created a binary variable to specify whether a given participant attended other basin committees, which includes other basin and sub-basin forums. Indeed, most actors can participate in sub-basin committees, but certain actors, such as state representatives, might also participate in committees that deal with other basins inside their state borders. Following this step, we created another binary variable to specify whether participants took part in state-based forums for water management, which are in charge of debating state-based legislation on water resources. We excluded national-based forums for water management from the analysis because these forums do not help us to explain influence; attending these forums can be considered a reward, since those who attend them are already influential and get chosen to participate there as representatives of their sector.

Results

We used all respondents’ assessments of influence to identify the most influential actors. We observed that actors rated as highly influential came from a diversity of backgrounds, including the three states and the three sectors (Table 1).

The previous literature has highlighted the strength of large private users in Brazilian water governance, as compared to government entities, and especially civil society representatives (Abers & Keck, 2004, 2009). The table shows we indeed find two water users among the 10 most influential participants, but we also note that three representatives of civil society are perceived as highly influential, as are five representatives of government entities. This is of particular importance considering

| Table 1. The 10 Most Influential Actors by State and Sector |
|-------------------------------------------------------------|
| Actor Type | Number of Actors |
|-------------|------------------|
| Geography (i.e., state) | |
| São Paulo | 3 |
| Minas Gerais | 4 |
| Rio de Janeiro | 3 |
| Sector | |
| Government entities | 5 |
| Private water-users | 2 |
| Civil society representatives | 3 |
that, as mentioned above, the partition of seats in CEIVAP is not equal: civil society holds 25 percent of the seats, government entities hold 35 percent, while private water users hold 40 percent. This descriptive analysis suggests that being perceived as influential is not exclusively explained by traditional attributes of power as identified in the literature, and thus lends support to the overarching hypothesis that all participating actors can potentially have a say in governance decision-making processes. This is also supported by the qualitative data, which indicate actors from the three sectors consider the introduction of participatory forums to be the largest change ever introduced in the water governance system of the Paraíba do Sul.

Our interviewees also brought up an issue we find especially important: they perceived a recent (at the time of fieldwork) threat in the form of possible future changes to the legislation regulating the national water governance system, precisely because traditionally influential private users with lobbying capacities considered participatory forums too powerful and might try to reduce that power. Additionally, a representative of the university believed the states were worried about NGO mobilization power, for which the forums present an opportunity.

Several of our interviewees participating in the committee—and representing each of the three sectors—as well as the actors we interviewed for their long-term knowledge of the system, considered that civil society was not as well organized as it should or could be. These interviewees still considered the participation of civil society representatives as key to ensure social control, accountability, and transparency in decision making, despite what they considered weaknesses in the organization of civil society representatives.

The introduction of the forums also appeared as a fundamental change from the perspectives of our participants from the three sectors, who stated that these forums provided an opportunity for small actors within each sector to have a say. Specific examples of these actors they mentioned were small municipalities, local NGOs, and small-scale agricultural producers.

Following our assertion that influence is not only in the hands of traditionally powerful actors, we continue to investigate what makes an actor influential. We first explored to what extent the variables we hypothesized to predict influence were correlated (see Appendix B for details of the results). The variables “number of forums” and “state-based forums” are strongly correlated (0.7067). We thus proceeded to run a series of multivariate regression models first excluding the variable on the number of forums, and then the variable on state-based forums.

The model we obtain when including the state-based variable is not as good as the one we obtain when excluding this variable and instead including the “number of forums” variable (\(F = 0.07\) vs. \(F = 0.02\), respectively, see Table 2). Furthermore, when included, the state-based variable is not significant. The results of the regression models in which we exclude the state-based variable and include the number of forums show that this latter variable is significant (Table 2, model 2). In both of the models, no other variable turns out to be significant. All of this suggests the number of forums is a better predictor of influence than participation in state-based forums, although the number of forums is highly correlated with state-based forums. In
Table 2. Regressions on Normalized Influence Rating

| Variable                        | Model 1 (Including State-Based Variable) | Model 2 (Including Number of Forums Variable) |
|---------------------------------|------------------------------------------|---------------------------------------------|
|                                 | Coefficient  | Standard Error | p-Value | Coefficient  | Standard Error | p-Value |
| Time in committee               | 0.025         | 0.020           | 0.230   | 0.012         | 0.020           | 0.560   |
| Degree of involvement           | 0.117         | 0.164           | 0.478   | 0.104         | 0.156           | 0.506   |
| Participation in other committees | 0.337         | 0.299           | 0.266   | 0.113         | 0.303           | 0.711   |
| Participation in state-based forums | 0.443         | 0.273           | 0.113   |               |                 |        |
| Number of forums                |               |                 |         | 0.198         | 0.077           | 0.014   |

\[ N = 42 \]
\[ Adj R^2 = 0.12 \]
\[ F(0,0) = 2.35 \]
\[ \text{Prob} > F = 0.07 \]

\[ N = 42 \]
\[ Adj R^2 = 0.20 \]
\[ F(0,0) = 3.49 \]
\[ \text{Prob} > F = 0.02 \]

*p*-values < 0.05 in bold.
conclusion, we therefore rejected hypotheses 2b, 3, and 4, but found support for hypotheses 1 and 2a (although we could not fully distinguish them due to strong correlation).

Additionally, the regression coefficient for the variable “number of forums” in the second model indicates that attending one more forum increases influence by 0.19 on a 5-point scale (with a mean of 2.82 and standard deviation 0.85). We interpret this as a fairly strong effect since it shows that, for example, attending four more forums would increase the influence by approximately a standard deviation (number of forums attended ranged from 1 to 9, thus attending four more forums is a real possibility for many actors). Moreover, the low $p$-value we obtain, considering the limited number of cases included, suggests this is a robust effect. Therefore, it is unlikely that attending more forums is not associated with higher influence.

Our qualitative data offer support for this interpretation. Some of our interviewees from civil society—specifically those that were among the most influential—explained that being present across forums is helpful in several ways: (i) it allows them to observe whether coalitions among state actors and water users exist, and if they are at play across different forums; (ii) it helps ensure that the state is accountable; (iii) it multiplies the opportunities to have a say in front of different audiences—some actors in those audiences might be overlapping, but not all of them are—which multiplies the opportunities to actually have a say in management, share opinions and experiences; and (iv) it opens up the number of spaces for mobilization that can then be used as a tool to enhance legitimacy in larger forums such as CEIVAP if actors manage to present themselves as representatives of other, smaller forums. Our own observations also highlight that attending different forums gives actors the possibility of using one of those forums to become its representative, either formally as a member of the directorate, or informally as a participant able to report back to CEIVAP what has been discussed elsewhere. This was reported to be useful in particular when discussing issues controversial in CEIVAP for which an agreement was reached in one of the other forums a given actor represented. We indeed observed during the plenary meetings in CEIVAP that actors used their ability to report on another forum’s position as a way to strengthen legitimacy.

Discussion

Through bridging the literature on power dynamics in participatory forums and the literature on the Ecology of Games, we are able to empirically explore the factors that seem to explain higher influence in a theoretically informed way. Our results suggest that participation in multiple forums seems to, at least partly, explain high levels of influence. These findings are noteworthy as they speak to both the critical literature on participatory forums and to the Ecology of Games literature. The literature on participation has called attention to the “elite capture” phenomenon, in which a few well-connected participants with considerable economic and political resources make use of those resources to determine the outcomes of participatory
processes (Fritzen, 2007; Ioris, 2009; Labonte, 2012; Saito-Jensen, Nathan, & Treue, 2010; Wong, 2017). Our results suggest that, in contrast, participants without formal authority or substantial economic resources can be perceived as highly influential, and that using the opportunity to attend a high number of forums seems to be a contributing factor to their achieving greater influence.

In their 2004 study on Brazilian water basin committees, Abers and Keck (2004) pointed out that obtaining support through networks outside of a given committee was essential to ensure the committees’ fulfillment of their planned activities beyond risks of elite capture. Our study complements theirs by specifically investigating who are the most influential actors in a federal committee (CEIVAP) and showing that they are those who participate in diverse forums regardless of their background. Additionally, this finding seems to reject the thesis that participatory reforms do not manage to include nongovernment stakeholders in the case of Brazil (Ioris, 2009; Tankha & Fuller, 2010). This might be explained by the fact that, as Ioris (2009) points out, after the 2004 reform most discussions focused on the issue of water pricing, which made the representatives of the private user sector particularly active—they were the ones being charged. Our qualitative data show that while water pricing is still an important issue in the daily business of the committee, as time has passed other issues, such as reforestation or sewerage treatment, have become important, which might explain why different actors have a voice.

It is worth reiterating the result that time spent over the years participating in the committee does not predict influence, which suggests the system offers newcomers opportunities to gain influence relatively quickly. The fact that the time spent in the committee is not a significant variable to explain influence suggests the system doesn’t necessarily rely on specific participants to keep functioning. This stands in contrast with previous studies, which highlighted that participating for a long time allowed actors to know how the system works and thus was an advantage for certain participants (Kumler & Lemos, 2008). Our results might differ because of the consolidation of the system since Kumler and Lemos (2008) conducted their study. After 20 years in existence, the committee might have consolidated as an institution, independently of the participation of specific actors.

However, we find it surprising that degree of involvement, an aspect that participants pinpointed as key during the interviews, was not significant in terms of explaining influence. But two caveats must be addressed: dedication was self-reported and, while actors might have indicated that they were highly involved in the committee activities because participating in the committee was fundamental for their work, this might not actually be the case. Second, attending multiple forums indicates significant involvement, albeit a type of involvement spread across the system, while we only measured involvement in CEIVAP. We thus acknowledge that the ability to attend multiple forums takes time and resources that not everyone has access to. Hence, not everyone will be able to build influence, at least not through increased participation across forums. Yet, we underscore how our results show influence is not restricted to actors of a certain type. This finding holds true across participants’ attributes, seemingly independent of whether they are private
water users, government entities, or civil society organizations (see Table 1 for a list of the 10 most influential actors).

These results show the importance of studying participatory forums in their institutional context. Indeed, the very institutionalization of the forum under study in the last 20 years as a stable decision-making forum might explain why different types of actors are influential. Considering that the committee effectively decides how to spend the money collected through water pricing, as well as on the regulation of the system reservoirs, becoming influential in this forum effectively makes participants influential in the system as a whole. Since decisions made in the plenary translate into concrete outcomes, being able to influence such decisions would seem a direct way to hold influence over the system. Besides the analysis of the quantitative data presented here, our observations of the dynamics at play during plenary meetings support the idea that a diverse set of interests is represented by participants from the three sectors (i.e., water users, government, and civil society). However, some of our participants reported that in times of crisis, powerful actors, such as government entities, might override decisions made by the committee. Moreover, some participants also shared their worries that large private users might use their lobbying capacities to obtain a change of legislation. Hence, our interpretation is that although the committee as a whole has come a long way in developing and exerting institutionalized influence, the stability of this influence should not be taken for granted. It is also worth noting again that some of our interviewees from traditionally powerful sectors considered that the committees held too much power and that their prerogatives should be reviewed. It is thus important to recognize the committee’s institutionalization is a contested process (Abers & Keck, 2006).

Moreover, developing a strategy of participating in many forums to increase one’s influence is obviously only possible in institutional contexts where there are many forums in which to participate. These results raise the question of what might occur in cases where participatory basin-based committees are isolated, i.e., the only formal forum in which it is possible to have a say on water management. Further research needs to be conducted in such cases to determine whether informal institutions, and participation in them, fulfills a similar role.

The EGF literature “emphasizes organizational constraints, namely that organizations have finite capacity for networking and interaction with other organizations” (Scott, 2016, p. 219). Our results suggest it might be better to invest resources in attending many forums and not just one. However, a recent study found the opposite results (Mewhirter, Coleman, & Berardo, 2017), which again calls attention to the importance of context. Additionally, contrary to Mewhirter et al.’s study, we did not account for the possibility that CEIVAP was not the primary forum for all members. During the interviews, a majority of participants mentioned that the CEIVAP was the most important forum for them, but not all of them did, which means the comparison with Mewhirter et al.’s study must be made with caution. Future research should also investigate whether the types of links between different forums (i.e., if they are more or less interdependent) affect actors’ strategies to invest in one or several forums.
Conclusion

This paper has shown that the degree of influence actors hold in CEIVAP, the Water Basin Committee in charge of managing the Paraíba do Sul river in Brazil, is distributed across actors from different states and sectors, suggesting that traditionally excluded actors can develop strategies for participation that would increase their influence in the management of the basin. While our results show a diversity of influential actors, these are limited to perceived influence and thus do not allow us to rule out completely the danger of elite capture. Studies that disentangle how the committee’s views are respected, manipulated, or overrun by powerful actors would add even more depth to the results presented here.

Additionally, this paper has shown that the more forums an actor participates in, the more influential it becomes in CEIVAP. This study resonates with a previous study on the Brazilian water governance system by Abers and Keck (2004) in which the success of water basin committees was associated with the ability of its participants to link to other forums. The results of our study suggest that it is those very linkages that contribute to making participants influential. These findings seem to indicate pre-existing power distributions do not entirely determine the dynamics at play in the committee, and that the Brazilian water governance system, with its multiplicity of participatory instances, offers newcomers possibilities to gain influence. As we have argued, perceived influence is an important measure to study reputational power, since whether accurate or not, actors still act taking into account the perceived power dynamics (Fischer & Sciarini, 2015). More research is needed, however, to explore whether beyond being perceived as influential, traditionally excluded actors manage to determine at least some of the governance outcomes implemented through the committee’s decisions. Such research would allow us to determine whether the committee effectively manages to overcome the elite capture phenomenon.

These results contribute to some of the recent discussion on the Ecology of Games and also to the literature on participation by drawing attention to the institutional context in which participatory forums are embedded. We conclude from these results that in order to understand influence, it is important to understand the interlinkages between different forums in a governance system. Our results also call attention to the importance of studying these issues across contexts, since polycentric governance—where decisions are made in multiple overlapping forums—is increasingly common in water governance globally.

In particular, our study brings to the debate a case from the Global South, which has its own unique contextual attributes. Other cases from the Global South are needed to better identify the challenges posed by diverse contexts and institutional histories. For example, the forum studied was the pioneer in implementing the water payment system and it would be interesting to compare how the institutionalization of water payment schemes affects influence. Future studies could explore whether actors from civil society are also influential in forums in which financial contributions are not institutionalized but done ad hoc by specific actors on a project basis.
Moreover, the Brazilian water governance system comprises a multiplicity of participatory forums, which is not necessarily the case in other countries in the region, such as Peru, where water basin committees are the only participatory forum in the water governance system. It is important to compare these systems to better understand the effects of diverse institutional designs, in the Global South and beyond, in order to foster constructive North–South dialogues. In the particular case of Brazil, and of the Paraíba do Sul river, future research should continue to explore this rich case at different points in time. It would be especially interesting to study the system under environmental or political crises, in order to understand whether traditionally less powerful actors also have a say at critical times.

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**Notes**

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1. In Portuguese, CEIVAP stands for “Comitê para Integração da Bacia Hidrográfica do Rio Paraíba do Sul,” which in English translates to Committee for the Integration of the Paraíba do Sul River Basin.
2. As a sensitivity analysis, we also ran the regression without normalizing influence (i.e., without differentiating respondents’ assessments of actors’ influence based on whether they reported they knew the other actor or not), and we obtained essentially the same results, which are included in Appendix B.

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APPENDIX A. Competencies in the Brazilian Water Management System.

![Diagram of the Brazilian Water Management System]

**Figure A1.** Brazilian Water Management System. Adapted from MMA (2018).

**Figure A2.** Competencies at the State Level.

APPENDIX B. Variable Correlation

| Table B1. Correlation Results |
|--------------------------------|
| Time in Committee | Number of Forums | Degree of Involvement | Participation in Other Committees | Participation in State-Based Forums |
|--------------------|------------------|-----------------------|-----------------------------------|-------------------------------------|
| Number of forums   | 0.3716           | 1                     | 0.2183                            | 0.1998                              |
| Degree of involvement | 0.1512           | 0.7067              | 0.1711                            | 0.1646                              |
| Participation in other committees | 0.2817           |                         | 0.1998                            |                                       |
| Participation in state-based forums | 0.0964           |                         | 0.1711                            | 0.1646                              |
APPENDIX C. Coding Procedure and Coding Book

The data used in this article represent a subset of the data collected for a larger project that aimed at exploring participation dynamics in four different water basin councils in two countries. One person coded the material in its original language and proceeded to conduct intra-coder reliability tests at 6 months after the first coding (Mackey & Gass, 2005) for a subset of the totality of the project material, which gave a kappa coefficient in between 0.50 and 0.75, and is considered a fair percentage of agreement. Kappa coefficients are typically preferred to percentage of agreement coefficients because the kappa coefficient includes a calculation of coincidence as a result of random coding.

This procedure was helpful to refine the definitions of the codes. Additionally, after the totality of the material was coded, the content coded at each categorization was revised to verify coherence in coding. Furthermore, the content of each code was revised by visualizing the rest of the codes coding that same content through the use of the function “View—Coding stripes—All nodes coding” in NVivo (in NVivo, codes are called “nodes”), which was helpful to identify redundancy between codes, and thus further refine the definition of each code. For example, the definition of “benefits” was at first too broad and redundant with “institutional,” and thanks to these procedures these issues were revised. Moreover, the results of the intra-coder reliability test also revealed a problem in the consistency of sticking to the speech turn as the unit of coding, mistakenly coding questions posed by the researcher, and other irrelevant material, which explains why the kappa coefficient was not higher.

For the purposes of this article and to ensure the consistency of the coding, further intra-coder reliability tests were performed exclusively on a subset of the material on the case discussed here, 18 months after the original coding. The result of the second test provided a kappa coefficient in between 0.75 and 1, which is considered an excellent level of agreement. The kappa coefficient retained was the one for weighted values—i.e., taking into consideration the length of different material (0.88 versus 0.80 for unweighted material). The percentage of disagreement was explored through coding stripes and revealed redundancy in the coding. This iterative process was done with the purpose of exploring the richness of the data, rather than aiming at exhaustiveness, and to help the researchers retrieve the data to inspire and verify the quantitative analysis.

### Table B2. Regression on Non-normalized Influence

| Variable                  | Coefficient | Standard Error | p-Value |
|---------------------------|-------------|----------------|---------|
| Time in committee         | 0.479       | 0.856          | 0.579   |
| Degree of involvement     | 11.007      | 7.231          | 0.136   |
| Participation in other committees | −5.252      | 11.535         | 0.652   |
| Number of forums          | 12.705      | 2.575          | 0.000   |

N = 42  
R² = 0.42  
F(4,37) = 13.47  
Prob > F = 0.000

*p-values < 0.05 in bold.*
| Codes           | Definition                                                                                                                                 |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Benefits       | Elements participants perceive as benefits obtained from participating in different forums. These can be benefits for the organization they represent or for the governance of the system |
| Change         | Changes in governance or in a key relation in the social-ecological system that participants notice or believe are important. This code also collects proposed change or ideas for desirable changes. Finally, the code collects changes in relationships between actors or in the perceived importance of actors |
| Conflicts      | Instances of conflicts or conflictive relationships                                                                                       |
| Games          | Different decision-making instances intervening in the basin or in related areas of management. Includes instances of actors referring to other forums or spaces where decisions are taken and that they consider relevant for the management of the system. Includes mentions of agencies or specific competencies that actors see as related although they might not be formally associated |
| Institutional  | Instances of formalization of rules or consolidation of formal processes of management                                                        |
| Institutional problems | Problems or obstacles in institutionalization of regulations or laws, or mismatches between the legal frame and reality. Also includes instances of incoherence in regulation—as perceived by actors. The code also collects instances of problems that specific institutions face and that prevent their participation in forums, such as lack of funding, lack of staff |
| Interests      | Actors referring to or identifying other participants' interests, particularly instances in which participants defend their own agenda instead of having a holistic vision or supporting participation and debate |
| Participation  | Instances of participation, issues, concerns, strategies, visions, and benefits linked to it for the system                                   |
| Personalist institutions | Instances of specific individuals whose identity is not distinguished from that of the institution itself—might be pinpointed by participants or interpreted by the researcher |
| Power          | Phenomena revealing power dynamics or discourses directly indicating power dynamics, references as to where the power is “located” |
| Representativeness | Issues linked to representativeness and cases where representativeness seems to be working. This code deals with the relation between the participant and the group or institution it is supposed to represent, focusing on how it works concretely. It also addresses whether the water basin committee respects the representativeness mandate that it is given in its statuses or by law |

