

Theories and Methods of Agency Research in Earth System Governance

TABITHA M. BENNEY, AMANDINE ORSINI, DEVON CANTWELL,
AND LAURA IOZELLI

Chapter Highlights

- Over the last decade, Earth System Governance (ESG)–Agency scholars have increased their use of social and system dynamic theories, participatory and actorness approaches in agency theories, and justice approaches within critical theories.
- Qualitative and multiple qualitative methods are the most widely used approaches in research on agency in earth system governance, with very slowly growing methodological pluralism.
- In the future, scholars in this field may benefit from the integration of cross-disciplinary and increasingly complex methods in an effort to foster linking of environmental sciences more broadly into environmental governance research.

3.1 Introduction

Even in the absence of political authority, global governance provides the complex structures and processes actors use to coordinate their interests and needs. As with other areas of governance, environmental governance has seen an increase in the type and intensity of interaction between actors in the system. In addition, non-traditional actors are emerging with greater frequency. Nowhere is this more apparent than in the interdisciplinary perspective of the Earth System Governance (ESG) Project. This chapter explores the range of theories and methods used over the past decade to study agency among earth system actors and the trends and options used to theorize, frame, measure, and test the institutional mechanisms and intervening variables that impact all types of agents in ESG scholarship. Analysing theories and methods, being elements common to all

kinds of research, is also an excellent opportunity to question the specificity of ESG research in comparison to other related fields.

3.2 Theory and Agency in Earth System Governance Research

Understanding the use of agency to tease out larger theoretical linkages in the governance literature has been helpful in advancing a range of debates. For instance, agency research has helped us to understand adaptive capacity or what Brown and Westaway (2011, p. 322) refer to as the ‘human motivation, behaviour, and responses’ that are crucial to environmental governance (see Chapter 12). Another fruitful theoretical linkage has been the use of agency to redefine ‘problems of agency as a problem of accountability’ (Rosenberg, 2017, p. 11), which may help to illustrate how and why environmental governance initiatives consistently lose traction (see Chapter 13). Using these and other types of linkage analysis creates new and innovative research tools, such as the principal–agent (P–A) theory, to problem solve dilemmas in earth system governance (Rosenberg, 2017). While fruitful linkages in agency research are more common today, how these linkages apply to earth system governance is not as well understood.

3.2.1 State of the Field: Theory and ESG–Agency Research

Understanding agency related linkages in earth system governance has always been a priority of the ESG network. Back in 2009, the ESG Science Plan noted (Biermann et al., 2009, p. 26), ‘Conceptually, only a few theoretical approaches have emerged so far that provide avenues for bridging social and natural science research related to the earth system’ and even where such theories exist and are ‘applied to local or regional systems such as river basins, cities and terrestrial or aquatic ecosystems’, it is rare to see them applied to the earth system. As ESG researchers are well positioned to draw on insights across a range of social science and behavioural theories, our goal was to understand the trends in this area over the past ten years.

To assess the state of the literature, we used the ESG–Agency Harvesting Database (see Chapter 1 and the Appendix) to systematically evaluate the types of theoretical approach used or advocated in the study of ESG–Agency research. According to the database, studies of agency in ESG research are compatible with a large number of theoretical approaches (see Table 3.1). This diversity is a common characteristic of interdisciplinary research and suggests that the theoretical choices used to study ESG–Agency-related topics are likely drawn from a wide array of academic fields.

Table 3.1 *Classification of theories in the ESG–Agency Harvesting Database*

Theoretical approach	Related conceptual frameworks
Agent-based theories	Actorness, Complex System Theory, Game Theory, Participatory Approach, Reflexivity, Social Learning, Social Network Theory, Soft Power, Values
Social and system dynamic theories	Adaptation theory, Constructivism, Global Governance, Institutional Interactions, International Political Economy, Institutional Theory, Legitimacy, Multilevel: Scales & Fragmentation, National Implementation, Policy Cycle Analysis, Realism
Critical theories	Ecojustice, Governmentality, Gramscian/Neo-Gramscian, Justice, Marxism

To provide some comparison with other forms of global environmental governance research, we sorted the conceptual frames from the database into three broad theoretical categories, which are derived from previous work on transnational governance research (Bulkeley et al., 2014): Agent-Based, Social and System Dynamic, and Critical Theories. Table 3.1 illustrates the outcome of this process. We used these three categories as they are broadly used in the literature and provide good coverage for the data under consideration.

We define Agent-Based Theories as those that are most directly related to agents and the autonomy that agents have with respect to structures. They therefore model the interactions of autonomous agents (both individuals and collective entities such as organizations or groups), in an effort to better understand their effects on the system as a whole. According to Bulkeley et al. (2014, p. 41), ‘Agency-based theories explain governance outcomes in terms of the interplay of the purposeful strategies of individuals or groups possessing agency. As work in this broad tradition has developed, it has moved away from narrow conceptions of agency in which particular interests, qualities and motivations are seen as inherent to actors and as determined by social or structural conditions (O’Neill, VanDeveer, and Balsiger, 2004)’.

Related to this set of theories are approaches such as Actorness, Complex System Theory, Game Theory, Participatory Approach, Reflexivity, Social Learning, Social Network Theory, Soft Power, and Values. Examples of work in this area include the study by Andrachuk and Armitage (2015), which uses insights from Social Network Theory to better understand marine protected areas’ governance. Other work in this area is seen in Lebel et al. (2016). This work uses a simulation game from Game Theory to theorize fish farming practices in Thailand. Likewise, Babon et al. (2014) use the advocacy coalition framework, based on Values, to study tropical forest governance.

The second theoretical category encompasses the Social and System Dynamics Theories, which look at how structures interact with agents. ‘Rather than looking at the agency of individual actors, social and system dynamic theories emphasize the relationships, norms and practices that link actors, as well as the mutual constitution of agents and structures. This perspective starts by examining the dynamic nature of what counts as governance and how the governance system, in turn, shapes who governs, how and to what effect . . .’ (Bulkeley et al., 2014, p. 47). The importance of an actor’s ‘embeddedness’ may be uniquely defined, but this factor is shared by each theory in this category.

Accordingly, the Social and System Dynamics Theories are broad-scope theoretical frameworks, covering a high diversity of approaches such as Adaptation Theory, Constructivism, Global Governance, Institutional Interactions, International Political Economy, Institutional Theory, Legitimacy, Multilevel, Scales & Fragmentation, National Implementation, Policy Cycle Analysis, or Realism. For example, Giri and Darnhofer (2010) use Constructivism to analyse community forestry as a platform for social change in Nepal. Jinnah (2010) studies the trade and environment nexus using the Institutional Interactions framework, which clearly illustrates both the structure and dynamic aspects of this category. Finally, Bernstein (2011) analyses the changing legitimacy requirements for non-state governance institutions, portraying the classic structural framework commonly used in international relations.

The third category of theories includes the Critical Theories. Critical theories broadly refer to critical perspectives that attempt to illuminate asymmetric relationships and the domination of nature in connection with ideological issues of race, class, gender, and species. Regarding the agent/structure debates, these theories emphasize the co-constitutive nature of agents and structures, but argue that this factor allows power dynamics to dominate in shaping agents. ‘Compared with the social and system dynamics lens, critical political theory also shares a view of the world as structured, but emphasizes the social conflicts of identities, interests, norms and so on that make up these structures, as well as the consequences, contradictions, messiness and instabilities of social and political life. It also shares with agency-based lens a focus on actors’ pursuit of specific interests or programmes of intervention, while also placing more emphasis on the historical and social constitution of these interests than on the values and choices of individuals’ (Bulkeley et al., 2014, p. 53).

Critical theories include Ecojustice, Governmentality, Gramscian/Neo-Gramscian, Justice, and Marxism. Work in this group includes a study by Armitage et al. (2012), which combines social and ecological theory to suggest an Ecojustice view on human–ecological systems. Apostolopoulou et al. (2014) also provide a good illustration of this category with their analysis of

the neoliberalization of nature using a Marxist perspective on biodiversity conservation.

Among the three broad theoretical categories we identified from the literature, the most prevalent in the ESG–Agency Harvesting Database are Social and System Dynamic Theories (55.3%), followed by Agent-Based Theories (32.6%) and then Critical Theories (3.7%) (see Table 3.2). This indicates the willingness of ESG scholars to capture the dynamics of agents in their broader social context in order to have a more comprehensive view. In addition, we identified four articles that used more than one broad category of theory. Three of these used both Agent-Based and Social and System Dynamic Theories throughout the text of the article (Betsill et al., 2011; Galaz et al., 2016; Renaud et al., 2011). The final case (Biermann and Pattberg, 2008) was mainly Agent-Based, but also highlighted dynamic and also Critical Theories in this area. Considering the complexity of earth system governance, we were not surprised to find that Social and System Dynamic Theories dominate the field. However, the low number of articles using Critical Theory in ESG–Agency Database was an unexpected result.

Within the group of Social System and Dynamic Theories, the dominant conceptual framework is Multilevel (27%), with a research focus, for example, on private governance arrangements (Auld, Renckens, and Cashore, 2015; Bulkeley, 2012; Kalfagianni and Pattberg, 2013), on urban climate governance (Bulkeley and Castán Broto, 2013; Castán Broto and Bulkeley, 2013; Gordon, 2016b; van Stigt, Driessen, and Spit, 2016) and on polycentricity (Bixler, 2014; Gallemore et al., 2015). This is followed by Adaptation Theory (19.1%) with a research focus, for example, on risk governance (Djalante et al., 2012; Mees et al., 2014) or climate change adaptation (Bowen et al., 2015; Mees et al., 2012; Uittenbroek et al., 2016); and Institutional Theory approaches (16.9%) with a focus on, among others, the effectiveness of institutions (Barau and Stringer, 2015; Breitmeier et al., 2011; Stoett and Temby, 2015; Tiwari and Joshi, 2015). Adaptation theory is the only framework that is drawn specifically from the 2009 ESG Science and Implementation Plan (referring to Adaptiveness), while the others are more general to the social and behavioural sciences.

With regard to research adopting Agent-Based Theories, the most used frameworks are Actorness (59%), Participatory Approaches (23.8%), and Social Learning (6.7%). Actorness is the most used framework, as it enables researchers to study the autonomy of individual agents such as the EU (Koivurova et al., 2012; Rayner and Jordan, 2013; Schout and Jordan, 2008) or cities (Bulkeley et al., 2014; Seitzinger et al., 2012) in global environmental politics.

Finally, within the group of Critical Theories, the dominant approach is Justice (33.3%) followed by Governmentality (25%) and Gramscian/Neo-Gramscian approaches (25%). The frequency of Justice-based approaches likely reflects the

Table 3.2 *Theoretical approaches of the ESG–Agency Harvesting Database*

	Frequency	Percentage
Distribution of subcategories for Agent-based theories		
Actorness	62	59
Participatory Approach	25	23
Social Learning	7	6.7
Social Network Theory	4	3.8
Values	2	1.9
Game Theory	2	1.9
Complex System Theory	1	1.0
Reflexivity	1	1.0
Soft Power	1	1.0
Subtotal	105	100
Distribution of subcategories for Social and System Dynamic Theories		
Multilevel: Scales, Fragmentation	48	27.0
Adaptation Theory	34	19.1
Institutional Theory	30	16.9
Legitimacy	15	8.4
Institutional Interactions (Regime Complexes, Issue Linkage, Polycentricity, Orchestration)	12	6.7
Constructivism	11	6.2
International Political Economy	10	5.6
National Implementation	7	3.9
Policy Cycle Analysis	4	2.8
Realism	5	2.2
Global Governance	2	1.1
Subtotal	178	100
Distribution of subcategories for Critical Theories		
Justice	4	33.3
Governmentality	3	25.0
Gramscian/Neo-Gramscian	3	25.0
Eco/Justice	1	8.3
Marxism	1	8.3
Subtotal	12	100
Other		
Subtotal	27	
Agent-Based Theories	105	32.6
Social and System Dynamic Theories	178	55.3
Critical Theories	12	3.7
Other	27	8.4
	322	100

growing political claims for fairness and equal opportunity by marginalized actors in global environmental politics (Coolsaet and Pitseys, 2015; Mathur et al., 2014; Paloniemi et al., 2015). Likewise, governmentality is mostly concerned about technology as a new agent (Bulkeley et al., 2014; Certomà, 2015), and rising technologies in this research area may explain this finding.

These findings seem to suggest a stronger preference in the ESG literature for structured theories, which are able to capture the complexity of the earth system, while also mapping the constraints that are exercised on agents (see Chapters 8 and 9). However, other factors may also influence the norms found in related research (see Chapter 10). For instance, researchers in the network may not necessarily use methods that support other theoretical approaches, governance theories may be consolidating around preferred approaches, or the publication outlets related to the field may have inherent biases towards specific ideological or methodological frames (e.g., biases in the social sciences against interdisciplinary research). There is also a clear preference for flexible approaches such as Multilevel, Actorness, or Justice rather than consolidated, state-centric theories such as Marxism and Realism. Again, this may reflect the global perspective of the authors, which reduces the efficacy of commonly used international theories.

3.2.2 Historical Trends in Theoretical Approaches in ESG–Agency Research

By looking at the distribution of the three main theoretical approaches to ESG–Agency research over the past decade (see Figure 3.1), and at the distribution of the subcategories of these main approaches, we identify three interesting trends. First, the use of Social and System Dynamic theories has increased over the years. As illustrated in Figure 3.1, we actually find consistent growth in the use of these theories from 2008 to 2011, but that growth has mainly levelled off and remained fairly consistent since 2012. This may reflect the increase in the study of multilevel governance issues more recently in ESG–Agency research (see discussion in the text that follows).

Second, we note a spike in Agent-Based Theories in 2012, followed by a consistent increase in the use of Agent-Based Theories since that time. In addition, a closer look at trends within the subcategories of Agent-Based Theories in the period 2008–2016 reveals an increase in the number of articles adopting a Participatory approach (de Loë et al., 2016; Fujisaki et al., 2016; Jacobs et al., 2016; Kramarz, 2016), as well as in the number of articles focusing on Actorness approaches (see earlier). This may reflect the rise in diversity and use of qualitative approaches in the literature (as we discuss later in the chapter), which may help to determine the theoretical perspective used within the research in this

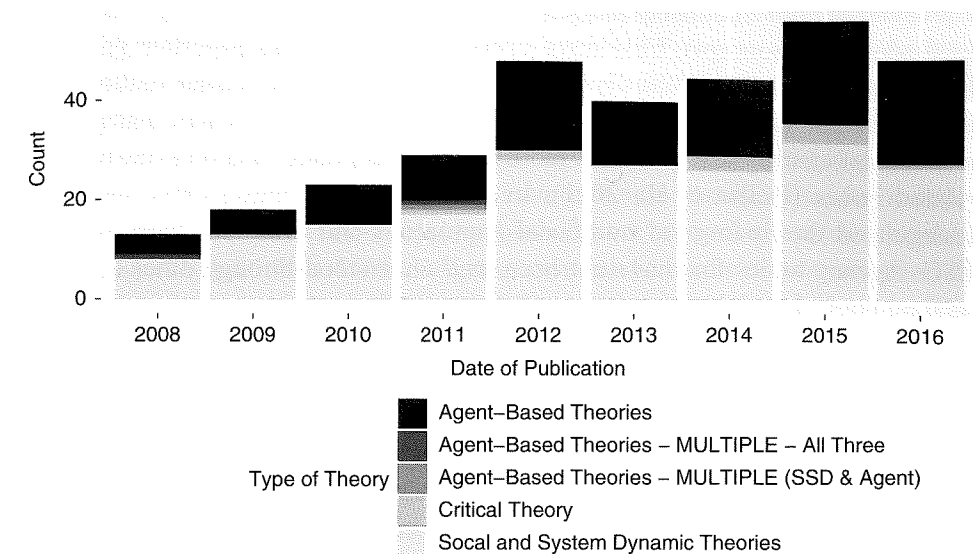


Figure 3.1 Categories of theories by type and year (2008–2016).

area or vice versa. Finally, the Critical Theories have been largely absent in these debates, as previously discussed.

3.3 Methods and Agency in Earth System Governance Research

While the ESG Science Plan (Biermann et al., 2009, p. 77) has always emphasized the importance of social aspects of global change research, calls for methodological advancements and increased sophistication have also been emphasized. For instance, the 2009 plan called for the expansion of the more traditional social science approaches in two important ways. First, it called for the integration of social and natural science research into computer-based modelling or scenario-building projects. The goal in this case was to explore ‘the analytical value of these approaches and to potentially integrate these initiatives into a larger research programme on earth system governance’ (Biermann et al., 2009, p. 77). Second, it focussed on model specification. The 2009 Science Plan notes, ‘... the study of earth system governance would benefit from improved tools for analysing complex causalities, capturing the dynamics of complex systems, and accounting for thresholds and abrupt change’ (Biermann et al., 2009, p. 77).

While such methodological advancements have not been dramatically reflected in the articles included in the ESG–Agency Harvesting Database, our analysis in this area serves to illustrate how the methods and frameworks used to understand agency in ESG research have helped to advance the field overall. By encouraging

a greater range of interdisciplinary methods and the use of increasingly complex methodological concepts, ESG researchers have made some important progress. For example, by systematically tracing who has been exercising authority in environmental governance through norms and values, researchers and policy-makers can identify and construct more meaningful policy interventions to solve related issues (Dellas et al., 2011). In addition, innovations in this area have triangulated the findings of traditional approaches and even shed new light on ESG–Agency topics that have not been well understood through other common methodological approaches.

3.3.1 State of the Field: Methods and Agency in ESG Research

We used the ESG–Agency Harvesting Database to systematically evaluate how methods were used in the ESG–Agency literature over the past decade. As shown in Table 3.3, cases were coded and sorted into five categories of methods: Qualitative, Multiple Qualitative Methods (defined as two or more non-quantitative methods), Mixed Methods (defined as research that used both quantitative and non-quantitative methods), other synthetic approaches (e.g., Qualitative Comparative Analysis [QCA] or Q-Method), and quantitative methodological approaches (e.g., game theory, regression, or network analysis). Table 3.3 provides an illustration of the distribution of methods in ESG-agency research that were produced through this process.

In the ESG–Agency Harvesting Database, most articles could be classified as doing non-quantitative methods (88.75%). This means two things. First, a wealth of qualitative and interpretative research has been done in this area, which has allowed for a richness and ‘thick’ description (Geertz, 1973) in the ESG literature. Schroeder (2010), for instance, looks at the REDD+ (Reducing Emissions from Deforestation and forest Degradation) agreements using a case study methodology

Table 3.3 *Methods used in the ESG-Agency Harvesting Database (2008–2016)*

Code		Frequency	Percentage
1	Qualitative Methods	223	69.25
2	Multiple Qualitative Methods	63	19.5
3	Mixed Methods	9	2.79
4	Other/Synthetic/QCA	3	0.93
5	Quantitative Methods	24	7.45
Total		322	100

to understand how REDD+ was negotiated and implemented from the perspective of indigenous peoples. Other examples of this include Feitelson and Fischhendler’s (2009) comparative work on Israel’s water policies and the policies of the countries surrounding it.

Second, we found Quantitative Methods were used in only 7.5% of the articles. This is in stark contrast to the field of environmental management, for instance, where it is estimated that two-thirds of published work contains quantitative methods (Ashley and Boyd, 2006). If ESG–Agency research is mainly non-quantitative, this means that there is only a small segment of research methodologically approaching the ESG–Agency questions in a way that allows for formal modelling and hypothesis testing. Furthermore, while qualitative approaches are holistic, they are inherently less generalizable. With so little quantitative analysis, ESG–Agency research may lose out on the valuable knowledge gained from overlapping research that is generalizable or the certainty measures that can be used to triangulate details from surveys, metadata, or large-N datasets (see Chapter 14).

Similarly, the least common category was that of ‘Other’, which was composed of synthetic methods (Breitmeier et al., 2011; Simpson, 2016; van der Heijden, 2015). These findings are surprising because such approaches are well known for simplifying complex concepts, such as those captured by earth system governance research. In addition, synthetic approaches are descriptive and holistic, while still managing 50–100 cases successfully. Despite this, such methods accounted for only 0.93% of the cases. While fantastic work using synthetic approaches is being used in other related fields, including Sociology (Grant, Jorgenson, and Longhofer, 2018), Development Studies (Goertz and Mahoney, 2012), Comparative Political Economy (Benney, 2015), and International Politics (Ignatow, 2011), they are less common in ESG–Agency research.

The reasons for this methodological imbalance are uncertain, but could be due to a lack of support for quantitative methods at institutions ESG researchers hail from or currently work at, low success rate in quantitative publications in the field, a lack of continuous development opportunities for quantitative methods for early and mid-career researchers, or a simply a lack of knowledge accumulation and coordination as scholars carry out interpretative and qualitative research.

On a positive note, many ESG scholars do use Multiple Qualitative Methods (MQM) when conducting research, which accounted for 19.5% of all cases. In addition, Mixed Methods accounted for 2.79% of the articles used. Work in these categories demonstrates some of the most impressive methodological innovations in the field. Often, MQM is used to triangulate findings and includes combinations of methods such as interviewing, document analysis, and case studies. A particularly complex implementation of mixed methods includes the work by

Orsini (2013), who developed an analytical framework to map how nonstate actors transmit knowledge and resources and then used that model to understand and categorize how nonstate actors participated in forestry negotiations. This article was unique because of its combination of theoretical modelling through qualitative data and quantitative analysis of a case study. A unique application of (multiple) mixed methods included Lebel et al.'s work (2016), which runs a role-playing simulation of fish farming to measure decision-making and then follows up this exercise with in-depth interviews to better understand causal factors for decision-making in the simulation. These various innovations reflect a clear and growing strength in the ESG–Agency research.

3.3.2 Historical Trends in Methods of ESG–Agency Research

Interestingly, when the ESG–Agency Harvesting data are classified based on methods used over the past decade, several key trends and important gaps emerge. As Table 3.4 illustrates, while the overall number of publications in the field has increased, qualitative studies have remained the dominant methodological approach in this research. Since the field of ESG is still fairly new, these findings may reflect an effort to focus on foundational research in the field. It may also suggest a preference for theory development, which may require a more robust methodological approach, thus driving the use of diverse methods in the field.

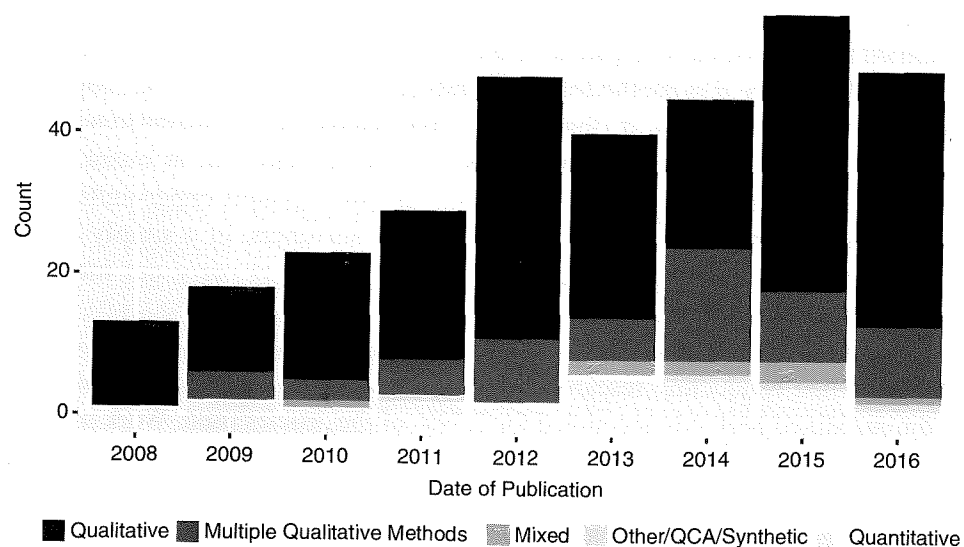


Figure 3.2 Methods categories by type and year (2008–2016).

Although qualitative methods have remained the dominant methodological type, from 2011 to 2014, there is a distinct trend away from single qualitative approaches towards multimethod qualitative approaches. We also find a measurable uptick in quantitative research during this period, but this is followed by a distinct decline in such methods since 2015. This may suggest a movement towards increased hypotheses testing following the earlier period of foundational research and theory development common to many new research agendas (e.g., Chemistry, Biology, or Physics) (Kuhn, 1962). It may also reflect a rise in research focused on the 2008–2009 Global Economic Crisis, which is generally more intuitively studied using multi- or quantitative methods. While there is some back sliding in these trends beginning in 2015, efforts to triangulate and capture complexity through increasingly sophisticated methodological approaches are a promising sign and suggest some advancement in our understanding of the issue of agency (see Chapter 14).

Despite the lower levels of quantitative and synthetic methods, the variety of methods used over time has become consistently more diverse. Thus, calls for increasing methodological pluralism from the 2009 ESG Science Plan (Biermann et al., 2009) have been heard, but there is still room for growth. While there has been extensive theory building and case studies on agency in environmental governance as a result of the dominant focus on qualitative approaches, there has simultaneously been a lack of research on agency that utilizes computer modelling, quantitative, or mixed method analysis. For example, according to Roig-Tierno et al. (2017, p. 25), the use of QCA has growing by 60% across all major disciplines, yet QCA and other synthetic approaches still account for only about 1% of ESG–Agency research. This is even more remarkable because the authors found that environmental sciences were the second largest consumer of QCA research (Roig-Tierno et al., 2017, p. 27).

The lack of complex system-based approaches has also left gaps in the literature in some, more complex areas. For instance, calls for ‘systematic comparison of perceptions of agency across nonstate actors’ (Nasiritousi, Hjerpe, and Linner, 2016, p. 110) and ‘systematic interrogation or analysis of dimensions of agency in environmental change literature’ (Brown and Westaway, 2011, p. 326) further support the need for ESG–Agency research to expand into these new forms of analysis if increased interdisciplinary is sincerely the end goal. Some examples of this work being done outside of the ESG project include systematic comparison of nonstate actor perceptions of democratization efforts and institutions done in International Relations scholarship (Grugel, 2002; Payne and Samhat, 2012), as well as nonstate actor perspectives of international law (Ryngaert, 2016). Such approaches are also broadly used in environmental studies where teams, like Mark Jacobson’s (Jacobson et al., 2017) at Stanford, apply modelling approaches to clean energy transitions. Their recent book provides an energy transition plan for 139

countries based on an interdisciplinary Complex Adaptative System approach that they modelled to demonstrate how countries can reach a 1.5°C freeze to combat global warming. Research like this is compelling and is a natural next step to the theoretical foundations the ESG project has established over the past decade

What explains the dominance of qualitative approaches? Possibly ESG–Agency research is inherently less well suited to synthetic, mixed, or quantitative methods; the sample or study has flaws; or the researchers using these types of methods have not been attracted to the field or the related publications. In any case, the ESG Project could benefit from supporting even greater methodological advancement and sophistication in the field. While that does not mean giving up the key approaches used today, efforts to integrate those approaches into larger projects (team science) is one key way to make advances. The ESG Project could also support training in mixed, multi-, and synthetic methods and provide special panels or sections focussed on advancing methods in the field. If the ‘main challenge is to find new methods or to combine a set of methods that can be used in inter or transdisciplinary research’ (Earth System Governance Project, 2018a, pp. 70–1), then some creative efforts will be needed to encourage the use of these methods in ESG–Agency research.

3.4 Conclusions and Future Research

In an effort to better understand the important trends in ESG–Agency research, this chapter explored the types of theories and methods used over the past decade to study agency among earth system actors. From our analysis of theoretical frames over the past decade, we noted three key trends. In addition to a consistent increase in the use of Social and System Dynamic Theories, we also find an increase in the use of Participatory and Actorness approaches in Agency Theory and increasing use of Governmentality and Justice approaches within the Critical Theory categories. Likewise, our analysis of methodological approaches showed a clear preference for qualitative and multiple method qualitative research, and a very slowly growing methodological pluralism. While the 2009 ESG Science Plan made distinct calls to develop more interdisciplinary and complex methods and to integrate them into the social science arena, progress has been slow and even receded since 2015.

What is clear from this analysis is that a diversity of theoretical frames has always been available to the ESG scholar, and increasingly methodological pluralism is being encouraged, but has not emerged in the key areas. As the 2018 ESG Science Plan (Earth System Governance Project, 2018a, p. 69) points out, scholars should be encouraged to choose the theory and method that best suits their research question or world view. It is precisely this diversity of perspective that underlies the concept of ‘team science’, that in fact, a better, more durable outcome or resolution

can be achieved when multiple perspectives are considered (Chapter 15). In short, innovative methods and theoretical frames must remain a priority if the ESG–Agency research is to advance further. The new ESG Science Plan is a keen reminder that quality research and methodological rigor should always remain a priority no matter the subject.