Ecology of Ecological NGOs: Agenda Setting in the Global Governance of Wildlife*

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Abstract

Organizational ecology has attracted growing interests in the study of global governance in recent years. As a structural theory, however, organizational ecology does not offer much insights into the feedback effects of organizational choices on the political environment. Focusing on the agenda setting role of nongovernmental organizations (NGOs), I theorize why the choice of specialism or generalism can explain changes in political environments, namely issue salience in the Global North. I exploit the unique features of wildlife conservation in order to devise a quantitative test for specialist NGO influence. The results show that specialist NGOs better explain issue salience than leading, generalist NGOs. I then explore the mechanisms of influence in the case studies of pangolin, whale, and elephant conservation. Based on in-depth interviews with conservation NGOs, I illustrate a variety of organizational strategies for specialization. The results challenges the conventional wisdom of NGO advocacy that small NGOs are free-riders of leading NGOs' advocacy resources. As a corrective to ecological theories in IR, my argument invites scholars to pay attention to the consequences of agentic actions in global governance.

1 Introduction

In the past decade, ecological theories of organizations received increasing interests as a way to understand global governance organizations. Scholars of global governance use organizational ecology to explain why certain forms of organizations, such as intergovernmental organizations (IGOs) and nongovernmental organizations (NGOs), emerged and accepted as legitimate forms of governance (Abbott, Green and Keohane, 2016; Bush and Hadden, 2019; Eilstrup-Sangiovanni, 2019; Lake, 2020). Organizational ecology is a *structural* theory because kinds and density of organizational populations are determined by the characteristics of the environment within which organizations operate (Freeman and Hannan, 1983). For example, in the environment where the density of organizations is high, the rate of founding for generalist organizations (e.g. IGOs) decreases while that of specialist organizations (e.g. private rule-making organizations) increases

*This is a draft; apologies for typos.

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(Abbott, Green and Keohane, 2016; Hannan and Carroll, 1992). In short, changes in the organizational environment are exogenous to the choices of organizations.

As a structural theory, organizational ecology does not tell us a lot about the feedback effect of agentic choices by organizations on the environment. Organizational ecology was first introduced in the field of organizational sociology, which is primarily interested in the dynamics among organizations themselves. The application of organizational ecology in global governance did not significantly alter this tradition. Existing research explains organizational dynamics well but not their effects on global governance. Although there are some important implications about the increase and decrease of certain types of organizations in the system (Abbott, Green and Keohane, 2016; Bush and Hadden, 2019; Eilstrup-Sangiovanni, 2019), they are not central to their theorizing efforts.

In this manuscript, I explicitly theorize the feedback effect of organizational choices based on an ecological framework, drawing on the insights of agenda setting research in global governance. More concretely, I argue that the choice of specialism as an NGO affects an important environmental condition, namely issue salience, because specialization allows the NGO to target the public that is interested in the relevant issue area. In so doing, I aim to offer a friendly amendment to our use of ecological theory in global governance and call for more attention to the *outcomes* of inter-organizational ecological dynamics. Empirically, I focus on NGOs rather than a more general category of organizations, such as governance organizations (Lake, 2020) or global governance organizations (Koppell, 2010) in order to ensure that organizations may differ in terms of strategies but remain comparable. Thanks to existing research on the ecology of NGOs (Bush and Hadden, 2019; Eilstrup-Sangiovanni, 2019), a focus on NGOs also gives us confidence that inter-organizational dynamics operate as expected in ecological theory, which allows me to focus on the consequences of organizational choices.

The "environment" is an important concept in organizational ecology. Existing research in both international relations (IR) and organizational sociology primarily define an environment in terms of functional areas, such as issue areas (e.g. conservation) (Bush and Hadden, 2019) and business industries (e.g. restaurant industry) (Freeman and Hannan, 1983; Hannan and Carroll, 1992), rather than a geographic boundary. My analysis here focuses on the governance of wildlife in order to explicitly operationalize key concepts, such as specialization, in ecological theory. For example, it could be difficult to identify "specialist" NGOs empirically since NGOs are operating in the ill-defined environment where "good" causes are constantly evolving (Carpenter, 2014; Krause, 2014). The issue area of wildlife conservation is useful because species names can be used to uniquely label different issues and, moreover, eliminate the possibility of NGOs to advocate for creative causes. While one may advocate seriously for previously non-existent issues like killer robots, one cannot do so for nonexistent species. In other words, NGOs are constrained to advocate for the issues that are known to exist, which allows me to observe issue salience independent of the success of organized advocacy.

In what follows, I review the literature on ecological theories in various disciplines and how the study of NGOs provide an exciting venue to think about the consequences of ecological dynamics in global governance. I then theorize why specialist NGOs have an important consequence on the agenda of global governance. I empirically evaluate my argument with the issue area of wildlife conservation. First, I conduct a quantitative test by leveraging computational text analysis. Second, I conduct case studies on pangolin (scaly anteater), elephant, and whale conservation to illustrate the mechanisms of specialist NGO influence. Finally, I illuminate the implications of

my findings in the context of organizational ecology and global governance.

2 Literature review

2.1 Ecological theory

Organizational ecology developed from the study of evolutionary ecology. Hutchinson (1959) introduced the concept of a *niche*, a set of natural resources on which a population of species can subsist indefinitely if there is no immigration, to explain a variety of species in an ecosystem. An ecological niche, however, experiences environmental changes, and when it does, the birth and death rates of species must change according to the niche width they depend on for subsistence (Holt, 2009; Hutchinson, 1961). A species that lives more than several years, such as mammals and birds, can outlive environmental changes by adapting to a wide-ranging niche, while short-lived species such as plankton may not be able to do so. Through adaptive evolution by natural selection, a community of species over time diversify and become specialized to ecological niches, eventually leaving little room for new species to invade (Elton, 1958). However, the natural environment is never entirely stable, and so a mix of specialized and adaptive species co-exists to create great ecological diversity (Hutchinson, 1959).

Organizational sociologists adopted the ecological perspective to explain why so many kinds of organizations exist (Freeman and Hannan, 1983). Large firms have an advantage over small firms in scale economy, but it is empirically clear that the market will not inevitably lead to monopolization by the largest generalist firm of an industry. Similar to the natural environment, sociologists argue that environmental changes, such as "seasonal fluctuations in demand" (Hannan and Freeman, 1977), in the market allow for specialist organizations to thrive in their ecological niches. In the newspaper industry, for example, daily newspapers coexist with specialized, typically small, newspapers catered to certain social groups (Carroll, 1985). This mechanism is what organizational ecologists call "market partitioning" (Carroll, 1985; Hannan and Carroll, 1992). In a partitioned market, the niches of generalist and specialist organizations do not overlap significantly, and so specialists can proliferate in the market while generalists also maintain their scale economy.

In the application of organizational ecology in IR, the concept of environmental changes took a back seat, and a greater emphasis was given to the density of organizations. This shift makes sense because there is no analytically useful seasonality in the international environment (Waltz, 1979).[1] In biology and sociology, generalism was said to outperform specialism when environmental changes are acute. IR seems to have replaced the mechanism of such environmental variability with competition, assuming that specialism is the dominant strategy in a high-density niche (Abbott, Green and Keohane, 2016; Bush and Hadden, 2019). However, this is true only under the specific condition raised by Freeman and Hannan (1983). Hannan and Carroll (1992: 159) summarize such conditions: "when environmental states differ radically, the optimal form depends on the speed of change. In this case, rapid environmental change favors specialism whereas slower change (meaning long durations in each state) favors generalism." Although it is difficult to measure global environmental variability, existing research suggests that the environment does change at a relatively fast pace given the rise of specialist organizations in recent

[1] If we take a very long time horizon, hegemonic transition may be called seasonality.

years (Abbott, Green and Keohane, 2016; Lake, 2020).

These environmental changes are, however, intertwined with agentic actions (Adler, 1997; Wendt, 1999). Environmental changes in global governance, such as "changes in public attention or attitudes" (Abbott, Green and Keohane, 2016), are ultimately a function of human cognition and actions. Although ecological frameworks are useful if we are interested in organizations themselves, it does not tell us a lot about the feedback effect of organizational choices on the environment. What happens to the environment, for example, if the population of specialist organizations increases? Even in the study of evolutionary ecology, there are cases where species cause environmental changes, but ecological frameworks are not theoretically well-equipped to explain feedback effects (Holt, 2009).

Unlike the study of evolutionary ecology, where populations of species depend on natural resources (Elton, 1927; Hutchinson, 1959), the resources that organizational populations subsist on are us—humans. Although what natural resources can "do" to themselves based on changes in species populations is limited to either increase or decrease, humans will do many more things than simply supplying economic and social resources to organizational populations. People can express opinions about what organizations do and be mobilized for moral causes. This is especially true when such organizations are politically motivated, such as IGOs and NGOs (Greenhill, 2020; Keck and Sikkink, 1998). Thus, the study of governance should not stop at describing what organizations do; instead, we want to theorize the consequences of organizational choices on the political environment.

Another reason to theorize the effect of organizational choices is to think about theoretical progress coming from applying an ecological theory to global governance. The original thinkers of organizational ecology do not limit their framework to any particular organizations. Early works have investigated dynamics among a wide range of industries, including newspapers (Carroll, 1985), brewers (Carroll and Swaminathan, 2000), restaurants (Freeman and Hannan, 1983), and interest groups (Gray and Lowery, 1996). These sociological works give us no prior as to why ecological dynamics should look different for political organizations. Indeed, Freeman and Hannan (1983: 1143) claim that their ecological arguments "hold for all kinds of organizations." If we accept their claim at face value, it is not very surprising that ecological frameworks can explain the dynamics among IGOs and NGOs. Is there anything new theoretically about studying political organizations under ecological frameworks?

2.2 NGO agenda setting

To theorize about the consequences of organizational choices, I turn to the study of NGO agenda setting. Since the seminal work of Keck and Sikkink (1998), IR scholars have conceptualized NGOs as entrepreneurial actors who spread new ideas and norms (Finnemore and Sikkink, 1998; Nadelmann, 1990; Price, 2003; Sell and Prakash, 2004). Although numerous problems exist in the world, they are not well-defined or salient among the public until advocacy efforts, or what Keck and Sikkink (1998) call "symbolic politics," successfully set agendas. Agendas, or the variation of issue salience, constitute an important environment to global governance, as they provide a focal point for international coordination and contention. Recent research on NGOs explicitly investigates NGOs' agenda-setting effect on such environmental conditions at the international level (Busby, 2010; Carpenter, 2014; Joachim, 2003). For example, Wong (2012) argues that Amnesty International contributed to the creation of modern human rights norms. Overall, the body of

NGO research features agentic actions by individuals and organizations (Stroup and Wong, 2016), motivating my effort to theorize consequences of ecological dynamics.[2]

Although early research on NGOs focused on a handful of high-profile NGOs, recent research explores variations in a wide range of NGOs. Stroup and Wong (2017) argue that only a fraction of the entire NGO population can be called "leading" NGOs, which are recognized by wide-ranging audiences, such as states, the public, and peer organizations. Carpenter (2014) claims that such scale disparity between NGOs, especially organizational centrality within advocacy networks, produce a hierarchical structure in civil society. As a result, a few, well-connected leading NGOs can decide what important issues are in their issue areas (Bob, 2011; Carpenter, 2014). An important consequence of such hierarchical networks is *bandwagoning* of small NGOs on the causes adopted by leading NGOs. Similarly, Murdie (2014) contends that small NGOs free-ride on the advocacy resources that leading NGOs provide. In short, existing research asserts that small NGOs do not actively contribute to environmental changes but only a handful of prominent ones do.

However, existing research focuses on the organizational scale of NGOs but overlooks the distinction between generalism and specialism in organizational ecology. For example, proponents of small NGO bandwagoning implicitly assume that all small NGOs are generalist organizations so that they can bandwagon when doing so is advantageous. However, this assumption is at odds with ecological theories, where small NGOs should die out if their strategies remain generalist due to their disadvantage in scale economy. Of course, if we assume all NGOs to be generalist, agenda setting power should be concentrated on the largest organization. But, if we relax the assumption of generalism and allow for NGOs to specialize in narrow advocacy niches, the mechanisms of agenda setting should alter significantly due to *resource partitioning* in organizational ecology, where the audiences of generalist and specialist NGOs self-sort into qualitatively different sets. This in turn provides an important clue to why specialist NGOs might have important effects in agenda setting.

It is important to note a couple of exceptions in recent years. Bush and Hadden (2019) discuss the dynamics of US-based international NGOs in ecological terms. However, their empirical analysis focuses on the rate of founding, stopping short of investigating the dichotomy between generalist and specialist NGOs due to the lack of available data. Eilstrup-Sangiovanni (2019) describe the diversity of NGOs based on an ecological framework, which includes the dichotomy of specialism and generalism, but the effect of this diversity on the political environment remains an open question. My argument is built on these efforts, which ensure that ecological dynamics operate among NGO populations.

3 Power of specialization

The purpose of this section is to develop a theory of specialist NGO influence. I focus on the key difference among NGOs discussed in organizational ecology, *generalism* and *specialism*, which in turn causes *resource partitioning* in the advocacy market (Abbott, Green and Keohane, 2016; Carroll, 1985; Freeman and Hannan, 1983; Hannan and Carroll, 1992). Generalist NGOs are defined by their ability to draw resources from a wide-ranging niche in the field. This concept echoes with the definition of "leading" NGOs by Stroup and Wong (2017). Generalist NGOs, such as

[2]That said, structural perspectives on NGOs also contributed to our understanding of global civil society. For example, see Sending and Neumann (2006).

Amnesty International and World Wildlife Fund (WWF), can draw resources from multiple audiences, including corporations and members of the public. By contrast, specialist NGOs target a narrow niche for organizational survival. Since specialization in effect segments the market into narrow niches, specialist NGOs tend to be small organizations (Carroll, 1985). A notable exception would be the International Campaign to Ban Landmines, which specializes in landmines (but not in other weapons) in human security governance.

Importantly, generalist and specialist NGOs do not compete directly due to resource partitioning. They subsist on different niches or, to be more exact, different groups of people. Early works of organizational ecology demonstrate mathematically and empirically how specialist organizations survive in the market in which dominant generalist organizations exist (Carroll, 1985; Peli and Nooteboom, 1999). In other words, people who support generalist organizations are different from those who support specialist organizations in important ways. The case of a brewing industry might provide a familiar intuition (Carroll and Swaminathan, 2000). We all have "connoisseur" friends who do not appreciate mass-produced beer but have amazing knowledge of the local craft beer scene.

Drawing on the insights of public opinion research, I argue that the key difference between different groups of people who constitute resource partitioning lies in their motivation to learn about an issue area. As Converse (1964: 245) puts it, "Different controversies excite different people to the point of real opinion formation." Public opinion scholars call such groups of individuals who share common interests and curiosity as *issue publics* (Henderson, 2014; Hutchings, 2003; Krosnick, 1990). Existing research shows that issue public members are more knowledgeable, more opinionated, and more likely to be mobilized for the cause than the rest of the public (i.e. the mass public) as far as the issue of their interest is concerned (Henderson, 2014; Hestres, 2014). Since members of the mass public do not hold important attitudes towards most political issues (Converse, 1964; Zaller, 1992), it is issue public members that primarily generate issue salience and, in some cases, political accountability (Hutchings, 2003).

As issue public members form behaviorally consequential attitudes, it is advantageous for NGOs to secure their attention in order to affect advocacy agendas in the public sphere (Krosnick, 1990). Specialist NGOs can target issue public members because they only require a narrow niche for survival. By contrast, generalist NGOs cannot do so since they would be outcompeted in the same niche in which other NGOs are specialized, just like multi-national brewing companies cannot outcompete local breweries (Carroll and Swaminathan, 2000). Instead, generalist NGOs must secure the support of non-issue public members who may not be interested in the issue *per se*. As a result, while generalist NGOs tend to have superior presence in the public sphere (Thrall, Stecula and Sweet, 2014), their ability to affect issue salience is mitigated by the attitude instability of non-issue public members.

The advantage of specialist NGOs in agenda setting is furthered by the sources of motivation for issue public members. Unlike general political attentiveness, which is said to correlate with some sort of intelligence and political occupation (Luskin, 1990; Zaller, 1992), personal interests in particular issues develop from individuals' social identities and core values (Howe and Krosnick, 2017; Krosnick, 1990). Again, specialist NGOs are better positioned to make appeals with particular social identities and/or ideologies, as their audiences are narrowly defined and should exhibit a smaller variation in those terms than the mass public.

Figure 1 summarizes my theoretical argument. Existing research on NGO agenda setting emphasized the path from generalist NGOs to issue salience without explicitly considering vari-

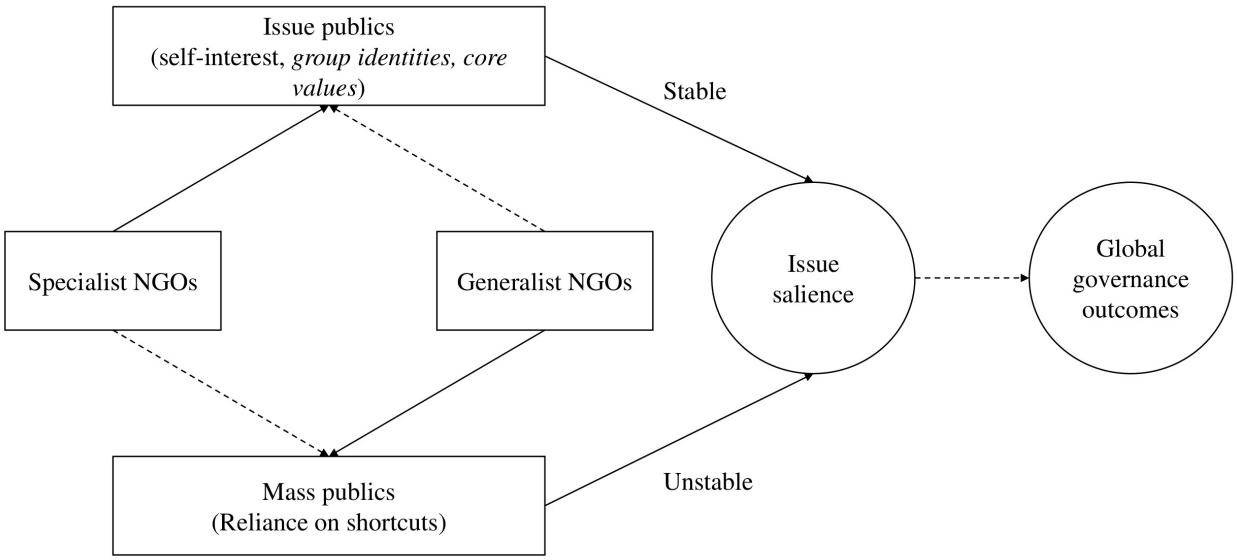

Figure 1: Theory of specialist NGO influence.

ations in the types of NGOs or motivation among the public (Bob, 2005; Keck and Sikkink, 1998; Price, 2003). By contrast, I emphasize the path from specialist NGOs to issue salience because issue public members generate intense and stable attention, which, in turn, trigger environmental changes in global governance. The linkage between issue salience and governance outcomes is outside the scope of this manuscript, but scholars have argue that increasing issue salience is a first step towards norm emergence (Carpenter, 2014; Rosert, 2019).

To be specific about observable implications, we should expect two patterns. If the traditional understanding of NGOs—and small NGO bandwagoing in particular—is correct, we should expect that issue salience is explained primarily by the agenda of generalist NGOs. If we expect that small, generalist NGOs will bandwagon on leading NGOs (Bob, 2011; Carpenter, 2014), we should find a strong relationship between the agenda of leading NGOs and issue salience.

H1: *The higher the priority of an issue for leading, generalist NGOs, the greater the public salience of that issue.*

By contrast, if my argument is correct, we should expect a strong relationship between the density of specialist NGOs and the public salience of their "own" issues. Although individual specialist NGOs may be small and have limited reach, a large number of them should amount to the effect that is comparable to, if not larger than, leading NGOs.

H2: *The higher the density of specialist NGOs in an issue, the greater the public salience of that issue.*

4 Research design

4.1 Wildlife conservation

To examine my argument, I exploit the unique features of wildlife conservation. The issue area of wildlife conservation offers three methodological advantages. First, wildlife conservation effectively mitigates the problem of selection bias. The study of issue salience is prone to selection bias because issues are typically not observable unless they are salient (Carpenter, 2014; Wong, 2012). As a remedy, existing research selects a few positive and negative cases, but case selection on the dependent variable (i.e. issue salience) could introduce selection bias (Geddes, 1990). Wildlife conservation provides a unique environment where negative cases are observable, because the existence of a species must be confirmed *prior to* the beginning of conservation advocacy.

Second, the objective urgency of each issue can be measured by a globally agreed-upon standard. The International Union for Conservation of Nature (IUCN) publishes the *Red List*, in which the conservation statuses of all biological species are recorded. The conservation status of a species is an indicator of how close that species is to extinction. It is based on scientific consensus and leaves few alternatives for evaluating species populations. In many other issue areas, such a measurement has questionable validity. Indicators of human rights and democracy, for example, are highly contested due to the political incentives of measurement providers in ranking countries (Cooley and Snyder, 2015; Merry, 2016). Certainly, the "urgency" of conservation issues can be interpreted in various ways. One may think of urgency based on how useful a species is to humans. Others may feel protecting the species in their country is more urgent than protecting those in distant areas. Nevertheless, the conservation status provides one well-established reference point to anchor my empirical analysis.

Finally, each wildlife conservation issue can be uniquely identified with a species name like "elephant" and "whale." Having only one word to specify potentially relevant texts from an immense amount of documents, such as newspaper articles and mission statements, is extremely advantageous for data collection purposes. For example, the freedom of expression has multiple identifiers, such as "free speech" and "right to express freely" and, moreover, conceptually overlaps with the freedom of the press, association, conscience, etc. In wildlife conservation, issues can be specified exclusively with species names, and most names are uniquely associated with corresponding species.[3]

4.2 Specialization

Empirically, there are many ways in which NGOs specialize in certain aspects of wildlife conservation. One could focus on a particular issue (e.g. Save the Rhino International) or adopt a particular tactics in their campaigns (e.g. Sea Shepherd Conservation Society). I use *issue specialization* as a way to operationalize the concept of specialism. Although tactical specialization is undoubtedly interesting phenomena, coding of advocacy tactics requires immense human labor (Eilstrup-Sangiovanni, 2019). By contrast, issue specialization can be captured by computational tools, and so this approach widens the scope of NGOs included in the analysis. Instead of using

[3]Not all species names are equally unique, however. For example, the word "bear" could be a verb or a last name. See Section 5.1 on how to mitigate this problem.

the *Yearbook of International Organizations*, which is known to miss many small, presumably specialist, NGOs (Bush and Hadden, 2019), I can compile an original dataset of NGOs from national registers.

The unit of analysis is therefore the issue, or more concretely, the species name. In this analysis, I focus on mammalian species for context-specific reasons. First, although the *Red List* catalogs all biological species, including plants and insects, most of them are virtually unknown to the public. Even among ecologists, there is a tendency to study vertebrates, especially mammals and birds (Platnick, 1992). Second, the species in the *Red List* are categorized at the level of *family*, which differentiates what we group as the same kind of species in public discourse. For example, the families of whales include right whales (*eubalaena glacialis*), sperm whales (*physeter macrocephalus*), humpback whales (*megaptera novaeangliae*), to name a few. Since NGOs do not always differentiate families in their advocacy campaigns, my analysis uses colloquial labels rather than families. The aggregation of families into such units requires hand coding, which practically limits the number of species to be analyzed.

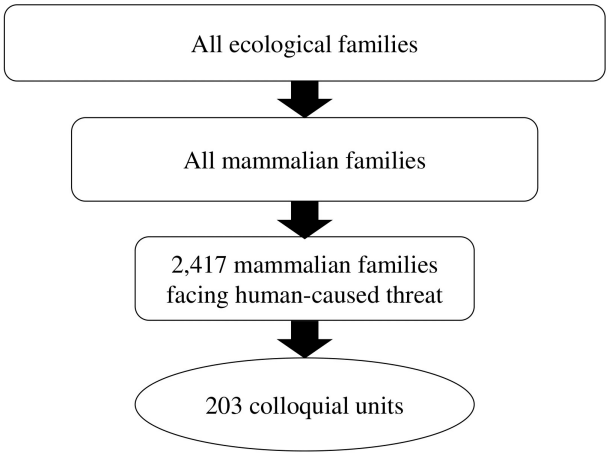

Figure 2: Unit of analysis.

The issues analyzed below are filtered through like a funnel, as illustrated in Figure 2. First, among all biological families, all mammalian families were selected. Second, among all mammalian families, 2,417 families were identified as facing a human-caused threat by the *Red List* (as of November 4, 2016). That is, any of these families has a *potential* to be advocated as a serious conservation issue, given that there is a clearly identifiable offender to their populations (Keck and Sikkink, 1998). Finally, these families were collapsed into 203 colloquial units, such as "elephant" and "whale" (See Appendix A in for the list of species).

Ideally, we also want to observe the issues longitudinally so that we can explore if the changes in NGO populations correspond to the changes in issue salience. However, it is extremely difficult to construct such a dataset, as different countries disclose their NGO data differently. Thus, in my quantitative analysis, all observations are pooled between 2008 and 2015. This period corresponds to major version updates of the *Red List*, which took place in 2008 and 2015, in order to keep constant the conservation status of each species. My case studies on conservation NGOs provide illustrations for specialist NGO influence.

5 NGO agenda setting in the global governance of wildlife

5.1 Dependent variable: Issue salience

The outcome of interest is the variation of issue salience among the public—the environmental conditions important to global governance—as public interests are "aggregated" or "transmitted" from the domestic to international level (Moravcsik, 1997; Steffek, Kissling and Nanz, 2007). Although the "global public" does not exist as a coherent entity, transnational publics are emergent in certain issue areas (Grant and Keohane, 2005). Crack (2008: 70–71) argues, "This expansion in physical infrastructure [for cross-border communication activities] could provide the material capacity for transnational public spheres to materialize around certain issue-areas." Similarly, Keck and Sikkink (1998) argue that mobilized publics can pressure Northern governments and IGOs. For example, the successful mobilization of Northern publics by the Jubilee 2000 campaign led to the debt relief for poor countries by the G7 nations (Busby, 2010; Yanacopulos, 2009). Accordingly, my analysis focuses on the select of countries in the Global North: the United States, the United Kingdom, Japan, and Australia.

These four countries vary significantly in terms of NGO and wildlife environments. In terms of institutional environments, Japan has restrictive NGO regulations, and the United States, the United Kingdom, and Australia have permissive NGO regulations (Bloodgood, Tremblay-Boire and Prakash, 2014). National regulations affect the strategies of NGOs, even when they operate globally (Stroup, 2012). Moreover, these countries are geographically distant from one another and offer a wide-range of wildlife populations NGOs can work on. Although I cannot cover all countries in the Global North, these four countries provide a useful test to evaluate the generalizability of my argument.

Issue salience is defined as the amount of attention that the public pays to a given issue. In order to measure issue salience, I used major newspapers in the four countries. As media's agenda-setting effect on the public is well-documented (Benton and Frazier, 1976; Cohen, 1963; McCombs and Shaw, 1972; McLeod, Becker and Byrnes, 1974; Soroka, 2002), newspapers can be used as a good proxy for public salience of various issues. Previous research relied heavily on the *New York Times* to represent global issue salience (Büthe, Major and de Mello e Souza, 2012; Rosert, 2019). However, doing so obviously biases the meaning of the "Global North." To improve my measurement, I selected newspapers based on their ideological positions and size of circulation. In each country, I selected one newspaper preferred among intellectuals and experts and the other circulated most widely in the country. Accordingly, The *New York Times* and the *USA Today* were chosen for the United States; the *Guardian* and the *Sun* for the United Kingdom; the *Age* and the *Herald Sun* for Australia; 朝日新聞 *(Asahi Shimbun)* and 読売新聞 *(Yomiuri Shimbun)* for Japan. All articles that contain "conservation" *and* any of the species names (for example,"elephant") were collected between 2008 and 2015.[4]

If we simply count the number of articles, however, the measurement will be extremely noisy because many articles discuss species outside the context of wildlife conservation. To reduce the noise, I took the weighted count of articles instead of a simple count. More concretely, I weighted every article in terms of semantic relevance to wildlife conservation and added them

[4]In Japanese, "conservation" is translated as 保護. Some species (for example, "bear") required additional exclusion terms to avoid double count ("polar bear") and/or irrelevant articles ("Mr. Bear"). All articles were collected from the *ProQuest* database.

together for each species.[5] This semantic relevance to wildlife conservation was measured by a list of keywords that represents the meaning of wildlife conservation. The main advantage of this approach is to give every article a continuous score, rather than a binary count, to capture its context closely.

The selection of such keywords is a common step in text analysis but requires careful attention because this very selection affects the entire analysis that follows. King, Lam and Roberts (2017) recommend using two sets of texts (i.e. target and nontarget texts) in order to discover the words that best discriminate the target texts (e.g. wildlife conservation) from the nontarget texts. Yet, because newspaper articles are not always tagged with a specific topic, and also because there is no reasonable way to discover a useful set of nontarget texts,[6] I introduce a four-step approach to generate the list of wildlife conservation keywords.

First, I exploit the feature of *ProQuest* topic tags. The *ProQuest* database restrictively adds a "wildlife conservation" topic tag on select newspaper articles, so I collected every article with this topic tag from the above newspapers during the period of analysis (2008-2015). These articles are assumed to discuss wildlife conservation issues only, creating the "gold standard" of what is meant by "wildlife conservation." Second, certain types of words were removed from the "wildlife conservation" articles. For example, extremely frequent words, such as "I", "is", and "at", fail to capture the context since they appear across *all* kinds of topics.[7] For the same reason, newspaper specific words, such as "wsj", "new", and "york" were removed. Third, the frequency of every unique word was counted in order to capture the content of the articles (Manning, Schütze and Raghavan, 2008). Here, twenty-five most frequent words from two parts of speech—nouns and adjectives—were selected for the keywords. Finally, species names were removed from the keywords to avoid double count.[8] The list of keywords is available in Figure 3.[9]

> program, threatened, habitat, national, number, trade, past, year, small, native, little, group, chinese, hunting, area, federal, illegal, agency, percent, legal, research, endangered, state, conservation, black, animal, international, white, recent, local, bird, polar, ivory, good, way, government, big, park, great, director, environmental, protection, world, law, population, water, wildlife, land, natural, northern, country, public, large, american, important, wild

Figure 3: Wildlife conservation keywords.

Once the list of keywords is set, the rest works like a sentiment analysis, a method to measure emotive expressions in texts (see Soroka, Young and Balmas, 2015; Young and Soroka, 2012). In other words, each article's relevance to wildlife conservation is approximated by the relative

[5] A reasonable alternative approach would be to count the articles that are clearly within the context of wildlife conservation. However, it is common for a single article to discuss multiple topics, and excluding every article that does not singularly belong to the topic of interest would lose many meaningful observations.

[6] Nontarget texts should come from "comparable" texts, such as party manifestos of major British parties (Laver, Benoit and Garry, 2003).

[7] These words are usually referred to as *stopwords*. I used the python package, `nltk`, to remove them. The list of stopwords is available at https://gist.github.com/sebleier/554280.

[8] I used `nltk` for the part-of-speech tagging.

[9] The same procedure was applied to the Japanese newspapers downloaded from 聞蔵 *(Kikuzo)* and ヨミダス *(Yomidasu)*. Instead of `nltk`, `MeCab` was used for text processing. See Appendix B for the Japanese keywords.

frequency of keywords in a given text. In order to standardize a keyword count across all articles, the number of keywords in each article was divided by the total number of words. These scores were then totaled for each species (`Salience`). Although this might seem complicated in words, it is relatively simple when formally expressed. Issue salience (S) for each species (i) is measured by newspaper articles ($j = \{1_i, 2_i, ..., n_i\}$) that i receives:

$$S_i = \sum_{j=1_i}^{n_i} \frac{K_j}{T_j} \tag{1}$$

Where K denotes the number of keywords in an article (j) and T denotes the total number of words in the same article (j). An important bias to keep in mind is that this measurement privileges the short articles that focus on wildlife conservation over the long articles that are tangentially related to the topic, compared to the mere count of keywords in the entire text. The reason to do so is that readers process the content of each article as a whole, as opposed to word by word.

This method works well with a single language data source, but it creates some imbalances when dealing with two or more languages. In my case, Japanese articles generally received low scores, presumably because the Japanese language has a different grammatical structure from English. However, Japanese newspapers published more articles during the period of analysis than any other country's in the sample,[10] ultimately accounting for 15.4% of total issue salience. Given the Anglo-centric nature of leading NGOs (Barnett and Walker, 2015) as well as of wildlife conservation NGOs (Kawato, Pekkanen and Yamamoto, 2015), the lower ratio of the Japanese newspaper score warrants the face validity. In validity checks, the keywords also successfully discriminated wildlife conservation articles from other topics (see Appendix C for details). Figure 4 plots each issue's salience against the conservation status.

5.2 Independent variables

5.2.1 Specialist NGOs

The key explanatory variable is the density of specialist NGOs, measured by the count of NGOs specializing in a given issue. I addressed two problems in existing datasets through the data collection process. First, counting the number of NGOs is not as straightforward as it might sound. IR research has frequently relied on the *Yearbook of International Organizations* as a go-to dataset (see Hafner-Burton and Tsutsui, 2005; Murdie and Davis, 2012; Smith et al., 2018), but it vastly under-reports the number of NGOs in the system (Bush and Hadden, 2019). To collect the broader sample of NGOs, I leveraged data from national charity registers and tax records.[11] More concretely, I used the following sources: electronic IRS-990 fillings on Amazon Web Services for the United States, the Charity Commission for England and Wales for the United Kingdom, the Australian Charities and Not-for-profits Commission for Australia, and 内閣府 (Naikakufu) NPO

[10] This is perhaps due to a translation issue. Conservation (保護) in Japanese could mean protection and preservation, so more articles may have been brought into the analysis. In this case, the overall low score of Japanese articles suggests that my method successfully weighted out-of-context articles.

[11] However, such NGO data still fail to encompass the entire population of NGOs. About 60–65% of all 990 form fillers submit an electronic form in the United States, for example (see https://lecy.github.io/Open-Data-for-Nonprofit-Research/).

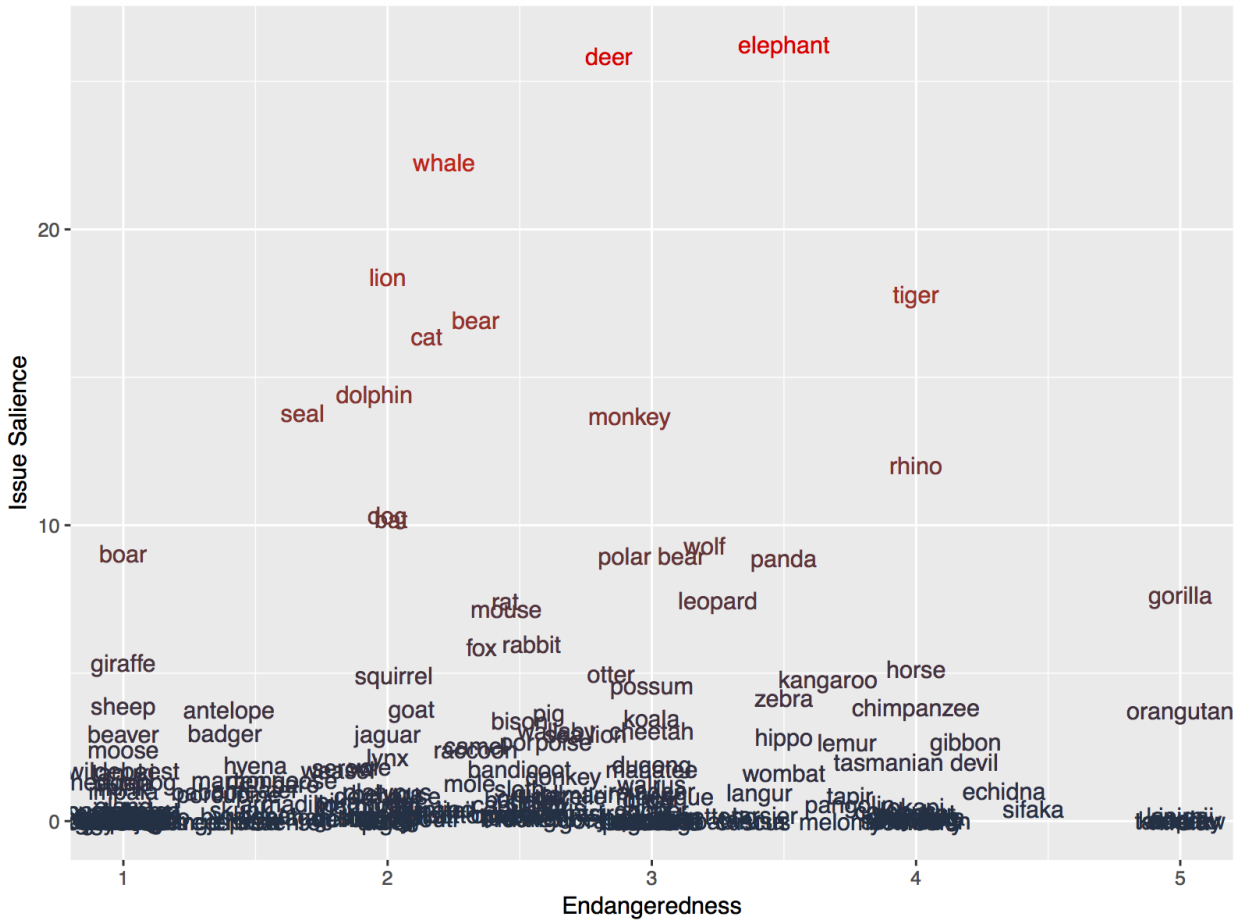

Figure 4: Scatter plot of issue salience in the Global North.

for Japan. The data were taken from 2016 to 2017, and NGOs that did not exist prior to 2015 were excluded.

Another problem is that existing datasets do not report NGOs' specific issue foci, so specialist NGOs cannot easily be identified. I counted an NGO as specialist if the NGO's mission statement explicitly states one or more species names. An NGO is also allowed to specialize in multiple species as long as its mission statement explicitly states specific species. A total of 350,000 mission statements were retrieved and machine-read, most of which did not operate in the area of conservation. For each issue, I counted the number of NGOs specialized in that issue (`Specialist NGOs`).[12]

Table 1 indicates the top ten species in terms of the density of specialist NGOs. Due to the method of identifying specialist NGOs, the density of specialist NGOs should be seen as a conservative estimate. For example, many Japanese NGOs simply hold corporate personhood, as opposed to non-profit status, in order to avoid heavy administrative duties (Pekkanen, 2004). Moreover, although some NGOs specialize in certain geographic areas and/or tactics, they are not treated as specialist. This is because issue specialization is operationalized through species names. Nevertheless, these NGOs provide an overall view of how the density of specialist NGOs varies between different issues in the Global North.

Specialist NGOs					
1.	Elephant	32	**4.**	Whale	19
2.	Bear	24	**7.**	Badger	16
3.	Bat	22	**7.**	Koala	16
4.	Dolphin	19	**9.**	Tiger	14
4.	Rhino	19	**10.**	Deer	13

Table 1: Density of specialist NGOs.

5.2.2 Leading NGO

Another important explanatory variable is the agenda of a leading NGO. Existing research on NGO agenda setting assumes that generalist NGOs mirror the agenda of leading NGOs to free-ride on their advocacy resources (Bob, 2011; Carpenter, 2014; Murdie, 2014). I focus on WWF as the leading NGO of wildlife conservation. Empirical evidence shows that WWF receives a wide-raging audiences or, to use ecological terms, thrive in a wide niche (Stroup and Wong, 2017). WWF holds the largest membership among US-based environmental NGOs (Bosso, 2005). Moreover, WWF has the largest material output among the US-based wildlife conservation NGOs. According to the 2015 US tax record, WWF spent over USD 136 million, whereas the second largest organization, Wildlife Conservation Society, spent a little over USD 98 million. To be sure, other leading NGOs, such as Greenpeace and Nature Conservancy, also advocate for wildlife conservation, but they do so as a part of broader environmental initiatives.[13] By contrast, WWF's

[12]The context of texts were examined by the combination of human reading and Boolean search.

[13]http://www.greenpeace.org/international/en/campaigns and http://www.nature.org/ourinitiatives/urgentissues/index.htm?intc=n
(Accessed: February 7, 2017).

main programs are structured to target specific species, fitting more closely to the context of wildlife governance.[14]

In order to understand the agenda of WWF (i.e. how WWF distribute its resources on different issues), I collected all reports in the "Conservation news & stories" of WWF Global's website during the period of analysis (2008–2015). Following the measurement for Amnesty International's naming and shaming tactics (Hendrix and Wong, 2013; Ron, Ramos and Rodgers, 2005), I used the number of reports published to discuss the conservation of a species as the indicator of WWF's conservation effort for that species (`Leading` NGO).[15] Unlike newspaper articles, WWF's reports are not weighted, since we know *a priori* that they are discussed within the context of wildlife conservation. As Figure 5 shows, WWF's conservation effort is uneven distributed and do not strongly correlate with the conservation status (r=.18).

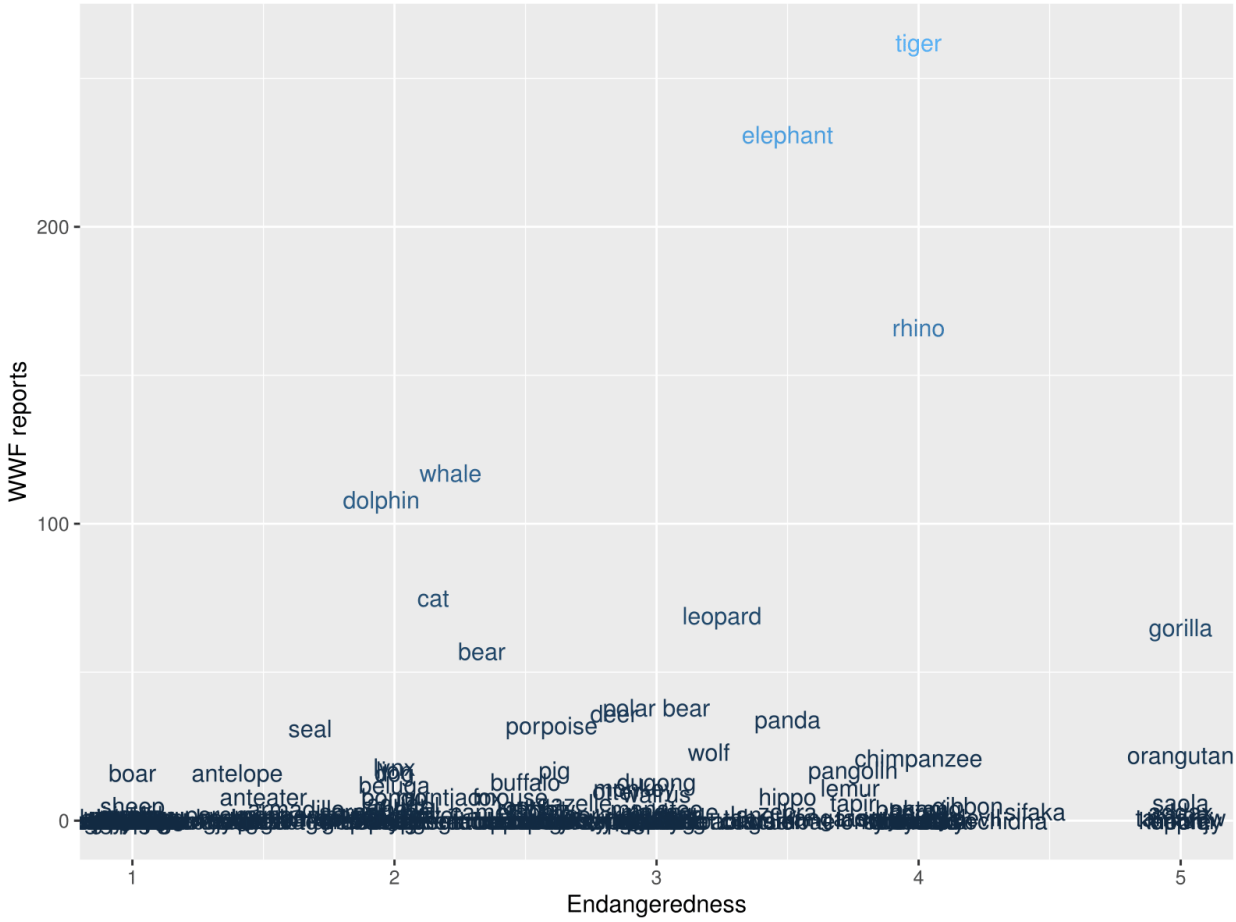

Figure 5: Scatter plot for WWF's issue prioritization.

[14] http://wwf.panda.org/our_work/wildlife (Accessed: October 1, 2020).

[15] An animal receives one article if the article mentioned the animal at least once.

5.3 Controls

Several other factors might influence public salience of conservation issues. First, it is important to carefully examine the effect of issue characteristics (Keck and Sikkink, 1998). Büthe, Major and de Mello e Souza (2012) argue that private foreign aid is driven by the urgency of countries to receive some relief, suggesting that issue characteristics may explain the variation of issue salience in other issue areas. If the urgency of an issue is an underlying cause for NGOs' advocacy effort, correlation between issue salience and NGO density could simply be spurious. To control for the conservation status, I constructed a variable from the IUCN's *Red List*. First, a 1-to-5 scale measure was created based on the *Red List*'s five conservation status: Least Concern (1), Near Threatened (2), Vulnerable (3), Endangered (4), Critically Endangered (5).[16] Then, in the process of making colloquial units (see Section 4.2), the average score was taken to indicate the conservation status of each species (`Conservation Status`). Recall that the species considered here are only those facing human-caused threats. As a result, while horses may not be typically associated with extinction due to wide spread domestication, the last surviving wild horse, Przewalski's horse, is labeled as Endangered (4), and so the "horse" as a unit receives 4 as its conservation status. However, this is an anomaly rather than a rule. Most other animals, such as elephants and bear, received unsurprising values.

Second, the geographic location of an issue might affect issue salience since the information attained from firsthand experience could travel through the local networks of individuals (Förster, Mauleon and Vannetelbosch, 2016; Huckfeldt and Sprague, 1987; Watts and Dodds, 2007). The theoretical importance of local networks is that they do not presuppose the presence of an authoritative source of information, with which NGOs are often associated (Gourevitch, Lake and Stein, 2012; Stroup and Wong, 2017). Indeed, Watts and Dodds (2007) argue that the likelihood of information cascade is only modestly greater in the networks that have influentials[17] and that no particular properties of such influentials can be identified *a priori*. If so, the public salience of an issue may have to do with *where* the issue is located rather than *who* spreads the information about it. The geographic distribution of species is recorded in the *Red List*. If an animal has a wild population in *any* of the four countries above, a dummy variable (`Global North`) takes a value of 1 (otherwise 0).

Finally, culturally embedded issues may become salient beyond the contexts of their origins because they fit better with the underlying normative structure (Bernstein, 2000). For example, Price (1995) contends that the taboo attached to chemical weapons in modern warfare was constructed *in part* by the popular imagination of poison as a morally reprehensible weapon. Similarly, some species are more culturally embedded than others, and so they may also be seen as important wildlife conservation issues. In their Foucauldian analysis on human-animal relations, Stewart and Cole (2014) argue that the representations of animals in children's books illustrate (quite literally) how human-animal relations are produced and reproduced through the childhood socialization. Indeed, human-animal relations are only a part of broader reproduction of dominant practices, as evident in gendered children's clothing, for example (Crane, 2012; Pomerleau et al., 1990). Species targeted at children also tend to be infantilized and cutified, so one can expect that such "cute" species are more likely to receive protection than those that are not

[16] Extinct, Extinct in Wild, and Data Deficient are removed from analysis.

[17] An influential is defined as a node that has a high number of other nodes that it has influenced directly. In Watts and Dodds (2007), for example, top 10% of all nodes in terms of the number of influenced nodes.

"cute." Accordingly, I explored children's books to discover which species are culturally salient. The cultural salience of a species (`Culture`) was measured by the number of times a species appears on the front page of top 100 books in Amazon's children's book section.[18] The summary of descriptive statistics is reported in Appendix D.

5.4 Models and discussions

Informed by the argument that leading NGOs have a disproportionate influence on issue salience (Bob, 2005; Carpenter, 2014; Price, 1998), Model 1 evaluates the effect of WWF's adovcacy effort (`Leading NGO`) while geography, conservation status, and the cultural salience of species are controlled. To test my argument, the density of specialist NGOs (`specialist NGOs`) was included in Model 2. Also, the location of the animals (`Global North`) was disaggregated into specific countries (`Country`) to explore if any particular country is influential for raising awareness of domestic speceies (Model 3).

As Figure 4 shows, the dependent variable (`Salience`) is skewed since it was originally a *count* of newspapers, and count data are known to have skewed distributions (King, 1988). While the variable is continuous, I adopted a negative binomial model to better reflect the nature of the data. As the negative binomial model only works for integer dependent variables, I multiplied `Salience` by 1,000 and rounded to generate integers. Certainly, a log-transformation allows the variable to approach normal distribution, which helps satisfy the assumptions of the OLS. However, we do not have a substantive theory to predict that the differences among highly salient issues would mean *less* than those among obscure issues. For example, personal income is conventionally log-transformed in regression analysis because a $10,000 difference among billionaires is much less meaningful than the same difference among low-income individuals. By contrast, I do not find that the same difference in issue salience carries different meanings depending on the salience of conservation issues.[19]

The results of the three different specifications are reported in Table 2.[20] The results provide strong support for H2, specialist NGO influence. Although the the effect of WWF is positive and significant in Model 1, the statistical salience of WWF vanishes once specialist NGOs are included in Model 2. This finding suggests that existing research may have overestimated the impact of leading NGOs on agenda setting due to the omission of specialist NGOs. Although the model says nothing about temporal sequence of NGOs' issue adoption, if NGO bandwagoning was correct, the statistical association between issue salience and specialist NGO density would have been explained away by WWF's agenda. Given that specialist NGOs cluster in the issues prioritized by WWF (see Table 1), specialist NGOs were able to thrive in the issues regardless of whether or

[18] `https://www.amazon.com/` for the United States; `https://www.amazon.co.uk/` for the United Kingdom; `https://www.amazon.com.au/`; and `https://www.amazon.co.jp/` for Japan. The data were collected in February 27, 2018. Although the data of data collection is outside the period of analysis, culture is a slow-moving variable, and we do not expect that human-animal relations had fundamentally changed in the past 10 years.

[19] OLS estimates with the logged dependent variable are available in Appendix E. The substantive effects appear similar to the negative binomial regression, while WWF is statistically significant across OLS models.

[20] The reports published by WWF exhibit a skewed distribution. The independent variable `leading NGO` is not log-transformed for the same logic as the dependent variable: I do not find any reason that the effect of an additional report will be smaller as the value goes up. For robustness check, the same models with logged `leading NGO` were used, and the main effect (`small NGOs`) remains salient.

	Dependent variable:		
	Salience		
	(1)	(2)	(3)
Specialist NGOs		0.130**	0.118**
		(0.040)	(0.043)
Leading NGO (WWF)	0.027***	0.013	0.012
	(0.007)	(0.007)	(0.007)
Global North	1.319***	1.065***	
	(0.217)	(0.213)	
United States			0.727**
			(0.253)
United Kingdom			−0.427
			(0.494)
Australia			0.528
			(0.306)
Japan			0.758*
			(0.360)
Endangeredness	0.052	0.030	0.037
	(0.098)	(0.098)	(0.103)
Culture	0.170	0.145***	0.141***
	(0.041)	(0.039)	(0.040)
Constant	3.736***	3.718***	3.808***
	(0.275)	(0.272)	(0.276)
Observations	203	203	203
Log Likelihood	−1,135.0	−1127.5	−1,128.7
θ	0.491	0.524	0.518
Akaike Inf. Crit.	2,282.1	2,269.1	2,277.4
Note:	*p<0.05; **p<0.01; ***p<0.001		

Table 2: Results of negative binomial regression.

not they are prioritized by WWF. This suggests that the specialism of NGOs manifests not only through issue specialization but also through tactical specialization.

The substantive effect of specialist NGOs is nontrivial. Based on Model 2, the average marginal effects of the key explanatory variables that pertain to H1 and H2 (`Leading` NGO and `Small` NGOs, respectively) are 11.2 and 168.5.[21] That is, one additional specialist NGO's effect is roughly equivalent to 15 published reports by WWF. In my data, the observed maximum of WWF's conservation effort (262 reports) can be translated into the effect of 17 specialist NGOs working on the same issue. Note that the observed maximum of the density of specialist NGOs (32 organizations) exceeds that total effect. To use real-world examples, gorillas are advocated by WWF fairly well (65 reports) but only seven specialist NGOs work on them. By contrast, bears attract a similar level of WWF support (57 reports), but importantly, 24 specialist NGOs work on them. Although other factors matter too, the fact that bears are roughly twice more salient than gorillas is illustrative of specialist NGO influence.

The strong association of specialist NGO density with issue salience could be explained by conflict and competition among NGOs. When NGOs cluster in a particular issue, inter-group conflicts are common regarding *how* the issue should be resolved, even though they might agree on *what* the ultimate goal should be (Cooley and Ron, 2002; Hadden, 2015). Such conflicts and debates are likely be picked up by the media due to well-studied journalistic biases (Bail, 2014; Boykoff and Boykoff, 2007; Merkley, 2020). Although the analysis above cannot provide conclusive evidence of specialist NGO influence due to the lack of temporal variation, it is strongly suggestive of their impact on environmental conditions in organizational ecology.

6 Mechanisms of specialist NGO influence

This section illustrates the mechanisms of agenda setting by specialist NGOs based on the interviews that I conducted with conservation NGOs between 2017 and 2019. I selected NGOs based on the characteristics of issues (i.e. species) in which they operate. The first case is pangolin conservation. The pangolin is a dog-sized, endangered mammal traded in Asia and Africa for traditional medicine and wildlife meat. Even though the pangolin was virtually unknown to the public before 2008, the issue of pangolin trafficking gradually gained salience over time. The advocacy was successful insofar as the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) imposed a universal ban on pangolin trade in 2016. The second case is a mix of highly salient issues: elephant and whale conservation (see Figure 4). These are the issues in which specialist NGOs co-exist with leading NGOs, but whether specialist NGOs meaningfully differentiate themselves or bandwagon on leading NGOs is an open question. By exploring the activities of specialist NGOs in these cases, I illustrate how specialist NGOs effect environmental changes.

6.1 Pangolin conservation

Save Pangolins is the first NGO established in the Global North to raise awareness of pangolin conservation. As the name suggests, Save Pnagolins is solely dedicated to the conservation of

[21] The marginal effect plot of each variable is presented in Appendix F. Due to the scarce observations of highly salient issues, the confidence intervals are large in higher values.

pangolins. When it was established in San Francisco in 2008, information about the trafficking of pangolins was very scarce. The founder of Save Pangolins reflected on his experience,

> In 2007, 2008, there was hardly any information on pangolins available, and very few organizations doing conservation work about pangolins. So one of the first things that we did was to build our website, savepangolins.org. And at the time it was the only website dedicated to pangolins.

Another effort emerged in the United Kingdom. Although the plight of pangolins was starting to attract some attention from conservationists, its public salience was nowhere near elephant or whale conservation. Two conservationists formed the group called the Pangolin Specialist Group (PSG) in 2012. The PSG is a part of the IUCN's Species Survival Commission, which consists more than 150 Specialist Groups for other species. Thus, the founding of the PSG by itself had little impact of the agenda of conservation governance. The purpose of the PSG was to provide a platform for the network of specialist NGOs dedicated to pangolins, including ones from the Global South, such as African Pangolin Working Group and Carnivore & Pangolins Conservation Program. One interviewee explained why he decided to establish the PSG:

> If you spoke to conservationists, as I did in Southeast Asia around sort of 2006, 2007, 2008, 2009, there was a growing awareness of the threats that the species was facing, but there was no concerted leadership to try and solve this problem, or really crystallize conservation action on that continental, if not global level.

The founders of Save Pangolins were invited to serve as Vice-Chairs for the PSG along with founders of specialist NGOs in Vietnam and South Africa. The network of these specialist NGOs were successful at disseminating the message about pangolin conservation to the conservation issue public. Although pangolin conservation still attracts much smaller attention than elephant and whale conservation, it is supposedly a favorite animal of British Price William, who founded the United for Wildlife, a network of leading conservation NGOs, including WWF and the Nature Conservancy.[22]

The growing salience of pangolin conservation at the global level is an environmental change in organizational ecological terms. After the CITES' ban on pangolin trade, WWF, partnered with Microsoft and other tech giants, established a program to monitor the illegal trade of pangolins, further legitimating the concerns for pangolins.[23] More recently, COVID-19 raised the salience of pangolins dramatically, as they were suspected of being an intermediary species of disease transmission between animals and humans (Lam et al., 2020). Although evidence for disease transmission is contested, more generalist NGOs bandwagoned on pangolin conservation campaigns.[24]

To summarize, specialist NGOs like Save Pangolins did not specialize in the niche occupied by generalist NGOs. Rather, they created a new niche for themselves. Niche creation happens occasionally in business industries; Apple's smartphone is an illustrative example (Lake, 2020). In political environments, niche creation may be even more common, as political elites regularly take

[22] https://www.dailymail.co.uk/news/article-7985429/The-pangolin-blamed-spreading-coronavirus-critically-endangered.html (Accessed: October 1, 2020)

[23] https://www.worldwildlife.org/pages/coalition-to-end-wildlife-trafficking-online (Accessed: May 28, 2020)

[24] https://www.wcs.org/get-involved/updates/wcs-issues-policy-on-reducing-risk-of-future-zoonotic-pandemics (Accessed: October 10, 2020).

opinion leadership. Although whales and elephants are extremely salient issues today, they were also novel issues back in the 1970s (Epstein, 2008; Nadelmann, 1990). In all these cases, specialist NGOs served as *entrepreneurs* by targeting a narrow niche—the conservation issue public—rather than the mass public to raise awareness of their own issues.

6.2 "Star" animals: Whales and elephants

Whales and elephants are widely known as the species that need protection. In terms of issue salience, they are undoubtedly "stars." Leading NGOs of wildlife conservation have been investing substantial resources on these species. For example, WWF's latest trade monitoring initiative targets not only pangolins but also elephants and rhinos. WWF also clearly states whales and elephants are "priority species" on its global website.[25] In the issues occupied by leading NGOs, how could specialist NGOs thrive?

According to the conventional wisdom of NGO advocacy, these specialist NGOs have been assumed as bandwagoners of leading NGOs (Bob, 2011; Carpenter, 2014). However, a closer look reveals that they make every effort to differentiate themselves from leading NGOs. The founder of the Tears of African Elephants (TAE), a Japanese conservation NGO dedicated to elephant and rhino conservation, explained why she wanted to found a new NGO instead of working for leading conservation NGOs:

> The organizations we see today do not have any impact. Because of the lack of impact, we strongly felt that we had to change. [...] It's unclear what big conservation organizations are doing. Although they have brand recognition and funding, we are not sure how that funding is being used. Although this might sound a bit harsh, having grown up in Africa, we've seen firsthand the lavish spending of expats from large NGOs. [...] If we compare these people with locals, the difference in their lifestyles is almost like the heaven and hell. (translated)

The TAE is special in many aspects. It specializes in community development in protected lands for African elephants. The TAE provides beekeeping devices and forestry skills to local communities so that residents will not be incentivized for poaching activities. Its approach to conservation can be contrasted with WWF' monitoring-focused approach. The TAE was founded by two female leaders, which is rare among Japanese organizations. As a Tokyo-based NGO, the TAE was successful at drawing resources from Japanese corporations. Thanks to these unique appeals, the organization was featured in a variety of Japanese TV programs, including one by NHK, the Japanese national broadcaster.

Similar to elephant conservation, whale conservation regularly attracts intense public interests. Sea Shepherd Conservation Society is a globally well-known NGO specialized for its confrontational tactics (Eilstrup-Sangiovanni and Bondaroff, 2014). However, specialization does not necessarily mean radicalization. Pro-whaling specialist NGOs, such as Society for Protection of Whale Food Culture and Japan Whaling Association, are reluctant to take any radical action in the public sphere. They are conservation NGOs in the sense that they work to maintain whale populations in order to continue whaling.

[25] https://wwf.panda.org/discover/knowledge_hub/endangered_species (Accessed: October 10, 2020).

Despite the lack of media stunts, pro-whaling specialist NGOs have been extremely successful at counter-mobilization in Japan. These NGOs appeal to the issue public by emphasizing cultural identities; pro-whaling NGOs frame whaling as Japanese cultural tradition that should not be overtaken by "Western cultural imperialism" (Blok, 2008: 48). An interviewee from the Institute of Cetacean Research, a Japanese NGO that manages "scientific" whaling programs, explained their outreach activities:

> We want to use food for PR, like holding tasting events for whale soup. [...] Also, speaking of public outreach, we visit elementary schools as guest teachers. Our whale researchers teach classes, and since there are too many schools these days, we go to regions where there is a history of whaling culture. (translated)

As the cases of elephant and whale conservation suggest, specialist NGOs target the issue public through tactical and ideological specialization. They do not create a new niche but capitalize on the dissatisfaction with leading NGOs and provide alternative approaches to the issue at hand. They serve as *issue keepers* because they continue their activities regardless of changes in objective conditions. For example, minke whales and African elephants are technically not "endangered" based on IUCN's *Red List*. Issue keepers help to maintain issue salience by continuously redefining their own issues, not so much because they want to survive, but because they truly believe that those are serious issues. The TAE summarizes this notion by saying,

> Even if our programs [anti-poaching and anti-ivory consumption campaigns] become unnecessary, I believe that co-existence of humans and wildlife is an eternal theme that Africa, and the world also, has to think about, and I will be working what's needed on the ground.

7 Conclusion

Organizational ecology is a useful framework to analyze dynamics among global governance organizations. Recent research in IR brought new insights as to why certain forms of organizations are more frequently founded than others (Abbott, Green and Keohane, 2016; Bush and Hadden, 2019; Lake, 2020). However, ecological theories in general lack explanations for feedback effects on environmental conditions. It is an unfortunate omission given that IR scholars have strong interests in analyzing the outcomes of global governance (Finnemore, 2014). In this manuscript, I explained why specialist NGOs can affect the salience of their own issues—an important environmental condition to global governance—by targeting the issue public, a subset of the public in which members hold common interests and curiosity. My empirical investigation, exploiting the unique properties of wildlife conservation, supports my argument about specialist NGO influence. As a corrective, my work encourages scholars to think about the consequences of ecological dynamics on global governance and invites them to explore the impact of organizational specialism in other issue areas and/or a broader range of organizational forms.

My empirical findings challenge the established notion of small NGOs bandwagoning (Bob, 2012; Carpenter, 2014). In my quantitative analysis, I have analyzed texts (i.e. newspaper contents) as data in order to accurately measure key variables, such as issue salience, the density of specialist NGOs, and WWF's agenda. By exploring the dimension of generalism and specialism

among conservation NGOs, I have shown that the density of specialist NGOs better explains the variation of issue salience than WWF's advocacy efforts in the Global North. My analysis joins the recent efforts of NGO scholars to investigate what used to be treated as "other" NGOs along with leading NGOs (Bush and Hadden, 2019; Eilstrup-Sangiovanni, 2019; Hadden, 2015). My findings suggest that "other" NGOs are not as trivial as we used to think. While my research focused on illustrating specialist NGO influence, future research should explore why some specialist NGOs succeed while others do not.

The concept of specialization is empirically complex, especially when we think about its consequences. My case study illuminates at least two mechanisms of specialization. First, NGOs may specialize in novel issues, just like specialist NGOs for pangolin conservation. Such specialist NGOs are *entrepreneurs* in the sense that they attempt to legitimate new ideas and norms in global governance (Finnemore and Sikkink, 1998; Nadelmann, 1990). In fact, many of today's leading NGOs started as specialist. For example, Amnesty International began as a group for "prisoners of conscience" (Buchanan, 2002; Wong, 2012), CARE was founded to send food packages to war-devastated Europe (Stroup, 2012), and WWF began as a fund-raising arm of the IUCN (Schwarzenbach, 2011). Later, all of these specialist NGOs grew into leading, generalist NGOs. Under what conditions specialist NGOs become generalist NGOs is an interesting question from an organizational perspective.

Second, NGOs may specialize in particular tactics, approaches, and ideologies if they work on the same issue as leading NGOs. These NGOs are *issue keepers* in the sense that they serve to maintain the salience of already salient issues in global governance, such as elephant and whale conservation. If we simply look at their issue specialization, issue keepers may seem to be free-riding on leading NGOs' advocacy resources (Murdie, 2014). As my case studies illustrated, however, specialist NGOs distinguish themselves from leading NGOs by appealing to issue public members who would not be satisfied with the work of leading NGOs. Further research is needed to investigate why such competitive environment is sometimes conducive to norm transformation (Rutherford, 2000) but leads to political conflicts at other times (Hadden, 2015).

To conclude, the agency of NGOs and political actors can be incorporated into ecological frameworks if we take environmental conditions as endogenous to organizational choices. Doing so will open up many questions about global governance and NGO strategies that have yet to be answered.

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A List of animals

aardvark, addax, agouti, anoa, anteater, antelope, aoudad, argali, armadillo, aye-aye, babirusa, baboon, badger, bandicoot, banteng, bat, bear, beaver, beluga, bettong, bilby, binturong, bison, blesbok, boar, bokiboky, bongo, bonobo, brocket, buffalo, cacomistle, camel, capuchin, capybara, cat, cavy, cheetah, chevrotain, chimpanzee, chinchilla, chiru, civet, coati, colobus, cottontail, cuscus, cusimanse, deer, dibatag, dik-dik, dog, dolphin, donkey, dormouse, dugong, duiker, dunnart, echidna, eland, elephant, fisher, fox, galago, gazelle, gemsbok, genet, gerbil, gibbon, giraffe, glider, goat, gopher, goral, gorilla, grison, grysbok, guar, hamster, hare, hartebeest, hedgehog, hippo, hirola, horse, hutia, hyena, hyrax, impala, jackal, jaguar, jerboa, kangaroo, kinkajou, kipunji, klipspringer, koala, kob, kouprey, kudu, langur, lechwe, lemur, leopard, linsang, lion, loris, lynx, macaque, manatee, mandrill, mangabey, marmoset, marmot, marten, maxomy, melomy, mink, mole, mongoose, monkey, moose, mouflon, mouse, muntjac, muskox, narwhal, numbat, nyala, okapi, olingo, opossum, orangutan, oribi, oryx, otter, paca, pacarana, panda, pangolin, pig, pika, platypus, polar bear, porcupine, porpoise, possum, puku, puma, quokka, quoll, rabbit, raccoon, rat, rat kangaroo, reedbuck, reindeer, rhino, ringtail, sable, saiga, saola, sea lion, seal, sengi, serow, sheep, shrew, sifaka, sitatunga, skunk, sloth, solenodon, squirrel, steenbok, suni, surili, tahr, takin, tamaraw, tamarin, tanuki, tapir, tarsier, tasmanian devil, tenrec, tiger, topi, treeshrew, triok, tuco-tuco, viscacha, vole, vontsira, wallaby, walrus, waterbuck, weasel, whale, wildebeest, wolf, wombat, yak, zebra

B Japanese wildlife conservation keywords

動物, 保護, 野生, 環境, 捕獲, 研究, 被害, 生息, センター, 調査, 活動, 地域, 対策, 世界, 管理, 生物, 飼育, 公園, 絶滅, 狩猟, 説明, 生態, 人間, 繁殖, 鳥獣, 観光, 県内, 教授, 地方, 展示, 参加, 確認, 森, 産卵, 施設, 計画, 山, 撮影, 全国, 協会, 電話, ウミガメ, 森林, 国, 保全, 地球, 団体, 子ども, 情報

C Validity checks

To further demonstrate the measurement's validity, I explore whether the wildlife conservation keywords correctly discriminate wildlife conservation articles (*i.e.* target articles) from the articles of other issue areas (*i.e.* non-target articles). In other words, if the keywords accurately captures the context of wildlife conservation, they should systematically return a higher score to target articles than non-target articles.

For simplicity, only English articles are examined. First, two sets of non-target articles were collected from the same newspaper outlets. The first set of articles was downloaded with the query "death penalty"; the second set was with "pet abuse" during the period of analysis (2008-2015). These topics were chosen for the semantic centrality of physical harm (against humans and animals, respectively), which also manifests, to some extent, in the issue area of wildlife conservation. Following the procedure expressed in Equation 1, every article was weighted with the wildlife conservation keywords. Table 3 reports the mean score of each set of articles. The difference between each pair is statistically significant based on Welch's t-test. Given that the

target articles do not always discuss wildlife conservation, the difference between the target and non-target articles is good enough to ensure the measurement's discriminant validity.

Mean Score		
Target Sample	0.0352	N=11,195
Pet Abuse	0.0159	N=468
Death Penalty	0.0141	N=5,626

Table 3: Discriminant validity check.

D Summary of descriptive statistics

Statistic	N	Mean	St. Dev.	Min	Pctl(25)	Pctl(75)	Max
Salience	203	2.298	4.454	0.000	0.087	2.290	26.241
Leading NGO (WWF)	203	8.813	30.518	0	0	4	262
Specialist NGOs	203	1.857	4.700	0	0	1	32
Global North	203	0.350	0.478	0	0	1	1
United States	203	0.232	0.423	0	0	0	1
United Kingdom	203	0.069	0.254	0	0	0	1
Japan	203	0.133	0.340	0	0	0	1
Australia	203	0.133	0.340	0	0	0	1
Endangeredness	203	2.446	1.114	1	1.5	3	5
Culture	203	1.143	4.430	0	0	0	32

E Robustness checks

	Dependent variable:		
	ln(Salience)		
	(1)	(2)	(3)
Specialist NGOs		0.069***	0.057***
		(0.011)	(0.012)
Leading NGO (WWF)	0.013***	0.006***	0.007***
	(0.001)	(0.002)	(0.002)
Global North	0.617***	0.499***	
	(0.082)	(0.077)	
United States			0.402***
			(0.098)
United Kingdom			−0.035
			(0.188)
Australia			0.304**
			(0.108)
Japan			0.318*
			(0.142)
Endangeredness	0.024	0.021	0.030
	(0.035)	(0.032)	(0.032)
Culture	0.054***	0.047***	0.047***
	(0.009)	(0.008)	(0.009)
Constant	0.281**	0.273**	0.271**
	(0.099)	(0.091)	(0.090)
Observations	203	203	203
R^2	0.583	0.655	0.668
Adjusted R^2	0.575	0.646	0.654
Residual Std. Error	0.541 (df = 198)	0.494 (df = 197)	0.489 (df = 194)
F Statistic	69.333*** (df = 4; 198)	74.691*** (df = 5; 197)	48.688*** (df = 8; 194)
Note:			*p<0.05; **p<0.01; ***p<0.001

Table 4: Results of OLS regression.

F Marginal effects

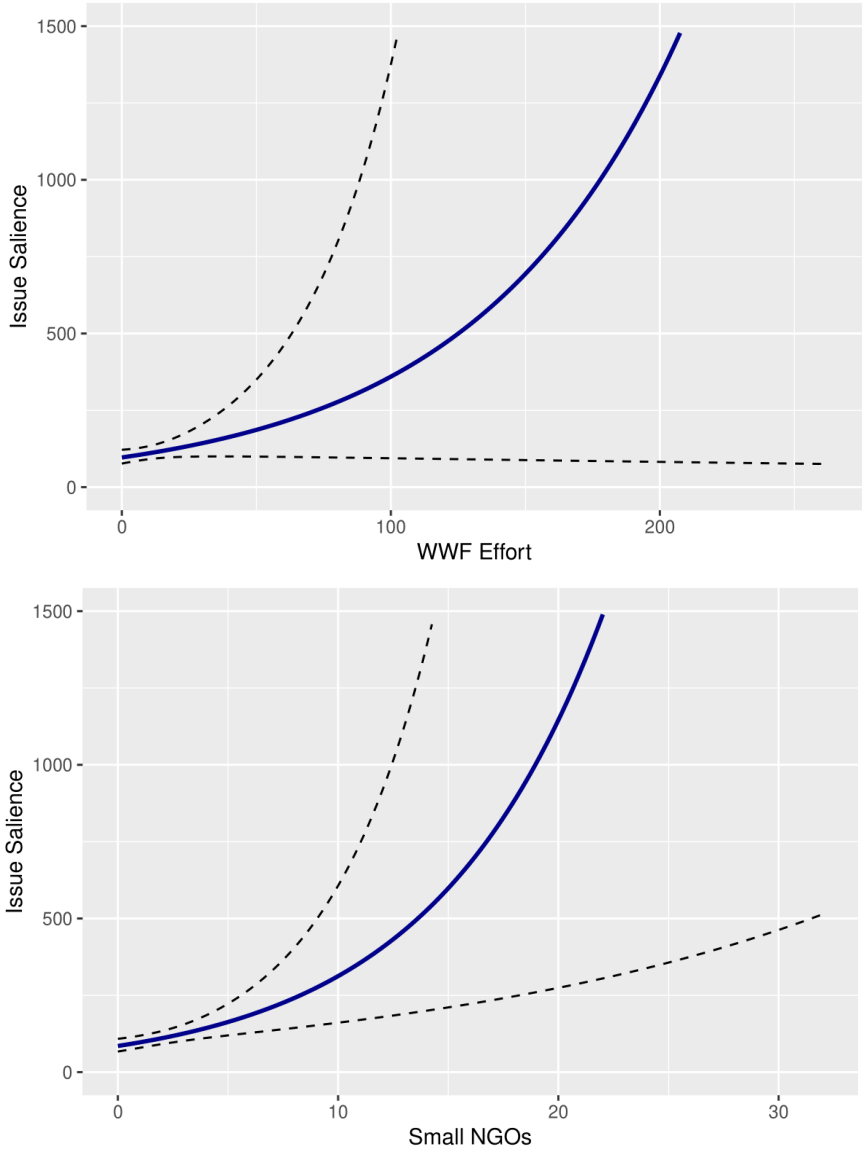

Figure 6: Marginal effects of specialist NGOs and WWF. Dotted lines indicate 95% confidence intervals.