Who Lobbies Whom? Special Interests and Hired Guns*

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Abstract

We highlight how the political and institutional environment in which lobbying takes place determines the organization of the lobbying industry and the probability of receiving limited political access. We show that special interests affected by issues that frequently receive high political salience lobby policymakers directly, while those that rarely receive high salience demand the intermediation services of "hired guns," for-profit intermediaries. Special interests and commercial lobbyists differ in their incentives to truthfully reveal private information to policymakers, and policymakers promise future political access conditional on salience and information transmission. We consider various institutional features of lobbying and inform empirical studies.

Keywords: Informational Lobbying, Constrained Access, Intermediaries, Financial Contributions, Regulations, Relationships

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1 Introduction

Two types of lobbyists compete for policymakers' attention. These consist of special interest groups that advocate for themselves utilizing in-house lobbyists and commercial lobbyists– often referred to as "hired guns"– who intermediate between special interests and policymakers. The questions we address in this paper are what economic and political incentives determine this division of lobbying activities between these two types of lobbyists; how do the policy issues on which the two lobby types lobby differ; and what roles do the political and institutional environments play in determining the relationships between lobbyists and policymakers? The standard industrial organization answer to these questions of which tasks are accomplished within a firm and which contracted out relates to economies of scale, control over information and secrets, hold-up problems, or access to human capital and expertise.[1] While there is undoubtedly some truth to these standard arguments when applied to the lobbying industry, they fail to consider some important industry features. Firstly, lobbying services are not a homogeneous commodity; rather, they involve a variety of activities that include, at a minimum, the transfer of information and resources from the lobby to a policymaker.[2] Secondly, the agents involved in transacting over lobbying services– special interest groups, commercial lobbyists, and policymakers– have varied objectives and face different incentives determined via principal-agent relationships, where either the policymaker or the interest group may be the de facto principal of the lobbyist.[3] Special interests are motivated by the desire to realize payoff relevant policy favors and either employ in-house lobbyists representing them exclusively or contract commercial lobbyists working for simple for-profit organizations. Lobbyists may not just differ in policy motivations but also in the market and regulatory environments they face in earning compensation. Policymakers value information and resources and acquire them via incomplete contracts with special interests and commercial lobbyists.

Previous work on these questions has taken an approach closer to that found in the standard

[1] For an overview of the theories of the firm see Gibbons (2005).

[2] Our analysis is tangentially related to the literature on the organization of lobbies and the aggregation of political preferences. There the focus is on economies of scale (Bertrand et al., 2014) in individual vs. group representation but also on control over information/secrets (de Figueiredo, 2001), arising from free-riding concerns (Bombardini and Trebbi, 2012; Lefebvre and Martimort, 2020), and how lobbyists as intermediaries may resolve such concerns (Ainsworth and Sened, 1993). Similarly, the literature focuses on lobbying policymakers directly or mobilizing the public to affect policy outcomes (Yu, 2005; Wolton, 2021). Our analysis is complementary as either form has to address the question of whether to lobby with in-house or commercial lobbyists.

[3] In other words, relational contracts can arise within and between organizations (Baker et al., 2002) but can also overlap. In lobbying, a lobbyist may act formally on the interest group's behalf and be integrated or not but is most likely rewarded by the policymaker. Ellis and Groll (2024) review principal-agent problems in lobbying.

industrial organization literature. In that literature, commercial lobbyists' have been modeled as existing because they possess one or more of a number of properties; they have specific expertise, enjoy economies of scale in gathering information, and can bundle financial contributions. These properties then allow them to establish relationships with policymakers (Groll and Ellis, 2014, 2017). Empirical studies have recognized the fact that policymakers and lobbyists establish long-lasting personal relationships (Blanes i Vidal et al., 2012; Bertrand et al., 2014; McCrain, 2018) that may be exploited to induce some form of effort on the part of lobbyists, such as gathering information or endorsing proposals. However, these studies do not consider the potential role of repeated relationships in inducing the truthful revelation of private information, how lobbyists of different types and representing different policy issues can form relationships with policymakers, or how special interests may strategically hire groups of lobbyists.[4]

It is well understood that information transmission is one of the lobbying industry's critical services. To be useful to policymakers, this information, while not always very fine, must be truthful in equilibrium. We focus on understanding how private information is truthfully transmitted and the mechanisms' implications. We provide a novel model of how a policymaker may employ repeated agency contracts to induce the truthful revelation of private information. The key novelty is that if we assume that truth-telling incentives may differ between special interests and commercial lobbyists, then not all lobbyists can establish ongoing relationships with time-constrained policymakers, as not all can transmit information credibly. This lack of credibility creates demand by some special interests for commercial lobbyists' intermediation services, who provide credible signals to policymakers. Hence, truth-telling incentives can determine the observed delegation of lobbying activities between in-house and commercial lobbyists and the relationships between lobbyists and policymakers. We show that incentives for truth-telling are affected by various political factors, such as policymakers' characteristics, the nature of policy issues, and relevant institutional features, such as transparency and term limit rules. Widespread concern focuses on the potential distortions of money in politics. We illustrate when money in lobbying may actually *increase* truth-telling by special interests.

The key to our analysis is the recognition that the salience of different policies, and thus the payoffs that policymakers associate with them, vary across policy issues and over time. Time-

[4]In these studies, lobbyists with past relationships with policymakers, such as due to the revolving door, college networks, or party membership, have an absolute advantage in gathering verifiable or unverifiable information. Similarly, experienced lobbyists may have advantages compared to newly formed special interest groups regarding how lobbying works. Here, we do not assign an absolute advantage to one type of lobbyist and show that incentives alone provide a complementary explanation for the division in lobbying.

constrained policymakers prioritize those issues that are the most salient to them.[5] However, to extract information on highly salient issues, policymakers require the incentives associated with future (repeated) interactions, which depend on the likelihood of high future salience. Special interests with policy issues that are frequently highly salient lobby policymakers directly and establish personal relationships that rely on truthful information transmission. Other special interests with infrequent, highly salient policy issues may be tempted to misrepresent information due to the low probability of future interaction. Therefore, they are incentivized to hire a commercial lobbyist to provide credible signals on their behalf. Interestingly, the more expensive the commercial lobbyists' services are, the greater the number of special interests that truth-tell and, hence, lobby directly. Not because of relative prices but because the commercial lobbyists' fees affect the truth-telling incentives of special interest groups. So expensive "K-Street" lobbyists are not necessarily a bad thing. However, one may wonder what the commercial lobbyist's incentives are to report information truthfully. We show that special interests would not hire a commercial lobbyist who could not transmit information truthfully; therefore, commercial lobbyists serve to provide "credible signals" for special interests and are not captured in equilibrium.

Our findings on the role of truth-telling incentives and their implications for the composition of lobbying and personal relationships are robust to several extensions regarding policymakers' characteristics, policy features, and institutions. For example, we show that purely ideologically motivated policymakers are not lobbied. However, partially ideologically motivated policymakers are lobbied by opposite-biased special interests or commercial lobbyists acting as their credible representatives. Policymakers also face exit and turnover. So an increased probability that the interactions between policymakers and lobbyists will end implies that policymakers are lobbied less by special interests and more by commercial lobbyists. So policymakers with insecure seats due to electoral or appointment turnover tend to be lobbied more by commercial lobbyists, as do policymakers approaching the end of their legislative or executive careers. Indeed, because truthful transmission of information relies on the threat that the deception of policymakers by lobbyists will be sanctioned, anything that reduces the ability to sanction leads to a compositional shift away from direct lobbying and towards commercial lobbying. Hence, whether and when the outcomes of a policy are observed becomes important in determining the composition of lobbying and which policies are realized. Similarly, suppose more policymaker time is devoted to politics,

[5] Alternatively, the policymaker has an outside option to enact policies, such as fundraising, personal or commercial activities, etc., that determine a minimum salience value required for their attention. Both of these interpretations of the constraint yield similar conclusions from our analysis.

such as fundraising and campaigning, and less time is dedicated to governing. Then there will be more lobbying by commercial lobbyists and less by special interests as the likelihood of future interactions is reduced because the special interests' incentives to truth-tell are undermined.

We are able to examine arguments as to whether there should be regulation of lobbyists receiving contingency or lobbying success fees. We discover that this seems to be a non-issue as commercial lobbyists who accept such fees could not truthfully transmit private information to a policymaker. Hence, in equilibrium, such a lobbyist would not be employed by a special interest as they could not provide a credible signal. Therefore there is no incentive for special interests to offer these fees in the first place. We also address the desirability of limits on financial contributions to policymakers. We show that such contributions can increase a policymaker's attention to governance issues relative to their other activities, such as campaigning, and de facto subsidize the policymaking process (Hall and Deardorff, 2006; Ellis and Groll, 2020). Rather than crowding out information as is standard, contributions actually increase the incentives for truth-telling as they increase the probability of future interactions between special interests and policymakers (Bennedsen and Feldmann, 2006; Dahm and Porteiro, 2008a,b; Groll and Ellis, 2014, 2017; Schnakenberg and Turner, 2019).

Lobbyists undertake a wide range of tasks on behalf of their clients/employers, consult with policymakers, and identify the optimal timing and targets for lobbying. The mixture of these activities has created roles in which lobbyists tend to specialize. Some lobbyists work primarily as analysts, researching policy topics and drafting proposals. Others focus on monitoring policy discussions, political campaigns, initiatives, and political turnover as "watch dogs" and internal consultants for special interests. Some build personal relationships with policymakers and act on behalf of special interests to "open doors and make introductions" by leveraging their political networks.[6] Our results can speak to these different roles that in-house or commercial lobbyists take on and for which type of organizations and policy issues they would perform such tasks. Special interests with high expected salience may employ a mix of internal watchdogs, who advise on the timing of lobbying, and reputable door openers, who reach out with credible information to the policymakers for whom an issue is highly salient. Special interests with intermediate expected salience may employ watchdogs, monitoring politics and waiting for the optimal time to pursue policy proposals, but then hire commercial lobbyists at the right time to push things

[6] Awad (2020) formalizes network effects and presents a model in which legislators who are ideologically aligned with a special interest group act as supporters and intermediate between other legislators and the group.

forward. Special interests with low expected salience may not even hire watchdogs and not consider lobbying. There would be a market for commercial lobbyists to act as an external watchdog revealing strategic lobbying opportunities to uninformed clients.

The theoretical predictions of our novel model allow us to throw some light on the questions of *who lobbies whom*, *who lobbies on what*, and *what role does the political environment play in determining the composition and organization of lobbying*. Our analysis is pertinent to some of the findings in the empirical literature (Blanes i Vidal et al., 2012; Bertrand et al., 2014), which have not previously been fully explained.

Related Literature Our analysis relates to various strands of the lobbying literature.[7] Foremost, our analysis focuses on information transmission from a privately interested and informed actor to a decision-maker who values policy-relevant information. As standard in the literature, a privately informed group may have incentives to misrepresent information when it affects the group's payoffs such that "cheap talk" outcomes arise (Crawford and Sobel, 1982; Milgrom and Roberts, 1986; Gilligan and Krehbiel, 1989; Potters and van Winden, 1992; Schnakenberg, 2017; Awad, 2020) and lobbyists engage in forms of costly signaling to establish full or partial credibility (Austen-Smith, 1994; Austen-Smith and Banks, 2000; Schnakenberg and Turner, 2021). Our analysis shows that in-house lobbyists of special interests and commercial lobbyists as "hired guns" differ in their incentives to transmit information truthfully. These hired guns can provide credible signals when in-house lobbyists cannot transmit information truthfully.

Our discussion of different incentives to transmit information truthfully is also related to studies of biased experts and advocates who may represent special interest groups as intermediaries and lobbyists acquiring costly information and offering quid-pro-quo contributions (Bennedsen and Feldmann, 2006; Dahm and Porteiro, 2008a,b; Groll and Ellis, 2014, 2017; Schnakenberg and Turner, 2019). Biased experts may benefit privately from policy choices and be incentivized to misrepresent information similar to special interest groups (Krishna and Morgan, 2001). Similarly, an advocate may be incentivized by a client or special interest group to achieve specific policy outcomes (Dewatripont and Tirole, 1999). Under both circumstances, the decision-maker may take advantage of representatives with competing interests to extract truthful information. However, the need for competing interests is also a limitation to applying this approach. We

[7]For an overview of lobbying models and theories, see (Grossman and Helpman, 2001; Hall and Deardorff, 2006; Gregor, 2017; Schnakenberg and Turner, 2023). For an overview of the recent empirical literature in political science, see de Figueiredo and Richter (2014), and in economics, see Bombardini and Trebbi (2020).

note that "information-based" rewards rather than "decision-based" rewards (Dewatripont and Tirole, 1999) dominate when lobbyists compete for a policymaker's attention and relational exchanges over time. In our analysis, there is no need for competing interests as a policymaker can incentivize a lobbyist to reveal information truthfully by exploiting a repeated agency relationship.[8] We show which type of lobbyist has the incentive to transmit information truthfully and how these incentives interact with the explicit policymakers' characteristics of policy salience, ideology, electoral or appointment cycles, and other distinct features of policies, politics, and the role of money in politics. A key insight here is that the timing and expected timing of policy salience matters for lobbyists' truth-telling incentives and special interest groups' lobbyist hiring decisions in a dynamic policy environment. These arguments are complementary to the standard economy of scale and differences in expertise explanations.[9]

The observation that lobbyists compete for policymakers' attention has been discussed in various forms in the literature. Policymakers are time-constrained and cannot devote time to all policy issues (Hall and Wayman, 1990; Hansen, 1991). As a result, they prioritize issues or allocate access strategically between competing special interest groups (Austen-Smith, 1995; Lohmann, 1995; Austen-Smith, 1998; Cotton, 2009, 2012; Cotton and Dellis, 2016; Schnakenberg, 2017; Dellis and Oak, 2019, 2020). The delivery of information to time-constrained policymakers can also be undertaken by intermediaries such as commercial lobbyists (Groll and Ellis, 2014, 2017), ideological lobbyists (Hirsch et al., 2023), or legislators (Awad and Minaudier, 2024). Our focus is on the policymaker's choice between directly establishing relationships with special interests or the commercial lobbyists representing them and the incentives this generates rather than on differences in attributes or technologies. We show that competition for limited access to policymakers today and in the future can explain who can establish lasting personal relationships and how they can induce truth-telling by special interest groups and commercial lobbyists if their policy issues are currently, and expected to continue to be, of high salience to the policymaker. Competition for access between lobbyists induces truthful revelation of information provided that the lobbyists repeatedly operate in the influence market. We also consider how financial contributions may gain a policymaker's attention leading to their considering and enacting additional policies (Hall and Deardorff, 2006; Ellis and Groll, 2020) and illustrate the

[8]For static models of strategic information transmission with a biased intermediary see Li (2010, 2012).

[9]For differences in the extent of the division between lobbyist types, see Bertrand et al. (2014) for U.S. federal lobbying, Kang and You (2018) for foreign lobbying in the United States, Greenwood and Dreger (2013) for lobbying at the European Union, and Hickey (2019) for lobbying in Quebec. These studies illustrate that commercial lobbyists dominate U.S. lobbying and have significant EU and Canadian lobbying shares.

positive effects of such payments that are not quid-pro-contributions for policy favors.

Lastly, the predictions of our model relate to a recently growing empirical literature that focuses on the personal relationships between lobbyists and policymakers (Blanes i Vidal et al., 2012; Bertrand et al., 2014; Kang and You, 2018; McCrain, 2018). Personal relationships between lobbyists and policymakers may have arisen through shared work experience and the revolving door (Blanes i Vidal et al., 2012) or repeated work on specific issues or campaign finance (Bertrand et al., 2014). It is also understood that lobbyists provide subject-specific or general expertise and that some lobbyists follow their connected politicians across issues when they change committees and policy issues (Bertrand et al., 2014). We add to these observations that personal relationships allow lobbyists to "offer" these connections and expertise to their employers and clients and potentially make them more credible in transmitting information than unconnected lobbyists and special interests– especially when the salience of issues to a policymaker may vary over time.[10] There is also empirical evidence that policymakers are selective in choosing to whom they grant access and that connected lobbyists are more successful in securing limited access when they represent foreign governments and their issues (Shepherd and You, 2020; Kang and You, 2018; You, 2022). Clearly, expertise and connections play a role in enabling lobbyists to maintain lasting relationships with policymakers, and it is unclear which is more important. However, our analysis offers some theoretical foundations for these empirical results. It can explain how relationships form, who can form such connections based on the transmission of information, who will have to hire connected lobbyists, and finally, how the stability of relationships depends on special interests' and clients' topics and contributions as well as on policymakers' characteristics.[11]

2 A Baseline Lobbying Model

We consider an environment where there is one policymaker and many lobbyists of both types, special interest and commercial. Associated with each special interest group is a unique policy issue, $i \in I$. For each policy issue, the policymaker chooses between selecting one of two policies left, l, or right, r, or doing nothing, n. Doing nothing is interpreted as not receiving the policymaker's attention rather than an active choice of the status quo. The policies are denoted $p_i \in P \equiv \{p_l, p_r, p_n\}$. The payoffs associated by the players with each policy depend on the

[10] For a review and presentation of personal relationships in lobbying, see Groll and McKinley (2015).

[11] Note that we do not dismiss the role of expertise but instead recognize that both highly informed or less informed lobbyists face the same dilemma of credibility and transmitting information truthfully.

issue-specific state of the world denoted $\theta_i \in \Theta \equiv \{\theta_l, \theta_r\}$. For expositional ease, we assume each state arises with equal probability, so we write $\rho_l = \rho_r = \frac{1}{2}$ as the probabilities of each state.

The policymaker's payoffs from any given issue are state-dependent and depend on both the policy and the state in the manner presented in Table 1.[12]

		Policy		
		p_l	p_r	p_n
State	θ_l	s_i	0	0
	θ_r	0	s_i	0

Table 1: Policymaker's Payoff.

The variable s_i is a measure of the current "salience" of a policy concerning issue i. Salience has many potential interpretations; it may represent the current prominence of the issue amongst the public driven by some external event, the opportunity to extract rents, or the importance of the issue to the policymaker's home jurisdiction, etc. We assume that for any given policy issue, $i \in I$, salience is a random variable drawn from the stationary distributions $g_i(s)$ with support on $[0, S]$. We shall assume that the issues may be ordered using first-order stochastic dominance, so for any $s^* \in [0, S]$ we have $\forall i \in I,\ G_i(s^*) > G_{i+1}(s^*)$. So higher values of i imply higher expected salience. This assumption captures the notion that some issues tend to be more often part of political discussions than others. We hereafter abuse notation and write $i = 1, ..., I$. We write the policymaker's payoff function associated with the issue i as $\mathscr{P}_i(p|s, \theta)$. The policymaker's payoffs are assumed additively separable such that $\mathscr{P}(\mathbf{p}|\mathbf{s}, \theta) \equiv \sum_{i \in I} \mathscr{P}_i(p|s, \theta)$, where the use of boldface indicates vectors. The policymaker is assumed to be an expected payoff maximizer that potentially interacts with special interest groups and commercial lobbyists. Since there is one special interest group per issue, the index i is employed for both. Special interest groups receive a policy-dependent, state-independent payoff $\mathscr{R}_i(p)$ illustrated by Table 2.[13] We assume throughout that the special interest group is a "right" group. This has no qualitative implications.

		Policy		
		p_l	p_r	p_n
State	θ_l	0	1	0
	θ_r	0	1	0

Table 2: Interest Group's Payoff.

Commercial lobbyists are simple profit-maximizers whose only source of income is a fee of F

[12] We consider later the effects of a policymaker's ideology.

[13] We also consider different payoffs for both the policymaker and special interest groups in later sections.

paid by a special interest group per period for representing them to a policymaker; their costs are normalized to zero. One can think of F as the markup over costs that a commercial lobbyist would charge compared to an in-house lobbyist.[14] The commercial lobbyist is identified by a subscript c whenever required. On any issue, their payoff is written $\mathscr{F}_i \in \{F, 0\}$.[15]

In any period, the policymaker makes two choices: which issues to enact policies on and then what those policies should be. The choices depend on the information received about each issue's current salience and their beliefs about that issue's future salience in a repeated game.

2.1 Information and Messages

We assume that ex-ante the probability distributions over states $\rho_l = \rho_r = \frac{1}{2}$ for every issue $i \in I$, and the salience distribution functions $g_i(s)$ $\forall i \in I$ are common knowledge.[16] However, in each period, the state of the world for each issue $i \in I$ is observed by both the associated special interest group, i, and if involved, the commercial lobbyist, hence our results do not depend upon assumed differences in expertise across in-house and out-of-house lobbyists. But there is asymmetric information in that the state is *not* observed by the policymaker. The policymaker can, however, receive messages concerning the state of the world from both special interest groups and the commercial lobbyist. Indeed we treat the sending of a message as synonymous with lobbying. The messages involve $m_i \in \{\Theta \cup 0\}$ and $m_c \in \{\Theta \cup 0\}$ where zero indicates no message is sent by the agent concerned. These messages are only informative if truthful; the policymaker's problem, therefore, involves devising an incentive structure that induces truth-telling.[17] This is where the repeated nature of the agency relationship is crucial.[18] Ex-post the policymaker observes their payoffs and can deduce whether the messages they received were truthful; they can then condition future play on current outcomes.

Given the information structure, we write the player's expected payoffs for any issue $i \in I$

[14] Later, we will also consider a lobbying success fee based on the commercial lobbyist's message.

[15] In an extension of the baseline model, we will show that signal-contingent fees paid by special interests are not an equilibrium outcome.

[16] The tasks of lobbyists vary widely, but active lobbying such as advocacy and monitoring policies and politics are those that they spend most of their time on (McGrath, 2006; Nownes, 2013). It, therefore, seems reasonable that they know these distributions.

[17] We could adopt an "information design" approach whereby the messages are mixing probabilities. However, it is not clear how the senders commit to these probabilities. It seems then more reasonable for the messages to be pure strategies of the form employed. Further, it is not clear that this would add any new insights.

[18] We assume that the policymaker is the principal and the lobbyists are the agents. This follows from the observation that policymaker time is the scarce key resource – see Groll and Ellis (2014, 2017) on this specific point and Dewatripont and Tirole (1999) for a general discussion of "information-based rewards" (awarded by the decision-maker) and "decision-based rewards" (awarded by the intermediary's client). However, we relax this assumption later when we consider the role of money in lobbying and show that this is an equilibrium outcome when informative lobbying occurs.

as:

i) $\Pi_i = E[\mathscr{P}_i(p \mid s, \theta)|m_i, m_c]$ for the policymaker;

ii) $\Omega_i = E[\mathscr{R}_i(p)|m_i, m_c]$ for the special interest group connected to i;

iii) $\Psi_i = E[\mathscr{F}_i]$ for the commercial lobbyist representing i's special interest group.

2.2 The Policymaker's Access Constraint and Decision Rule

We assume that the policymaker has limited capacity to review or enact policy proposals. We capture this idea by introducing a minimum threshold on salience, $\bar{s}$, that works as a cutoff with $0 < \bar{s} < S$ such that the policymaker may only consider proposals with $s_i \geq \bar{s}$. We consider later how financial contributions might relax this constraint in Section 4.2.

Furthermore, the policymaker has to decide on a policy whether lobbyists provided or did not provide information. Without information, a policymaker may abstain and choose p_n or randomize between p_l and p_r they have an expected positive payoff, or choose based on a bias. We assume in the baseline model that the policymaker randomizes between the proposals with expected positive payoff. However, we also consider extensions in Section 5.1 in which the policymaker has a bias, and may or may not respond to lobbyists' information.

2.3 Sequence of Play

Nature plays first and draws an s_i and a θ_i for every i. Then s_i is observed by all players, but θ_i is observed only by special interest i. The special interest group then decides whether to send a message m_i directly to the policymaker or employ a commercial lobbyist to act on its behalf and pay them F. If chosen, the commercial lobbyist observes θ_i and receives F; it then sends a message m_c to the policymaker. The policymaker collects all messages from both lobbyist types and chooses policies. Finally, payoffs are realized and observed by all players.

To ease the exposition we first present the Nash equilibrium in the one-shot game, then exploit these results to derive the Perfect Bayesian equilibrium characterization for the infinitely repeated game.

3 Equilibrium

Here we solve for equilibrium in the baseline model and illustrate how the incentives required for the truthful transmission of information explain both the division of lobbying between special interests and commercial lobbyists and the formation of ongoing relationships between lobbyists and policymakers. We then extend the baseline model in various political economy directions.

3.1 The One-Shot Game as Illustration

To compute the baseline model's one-shot equilibrium and provide some initial intuition, we first need to specify the policymaker's choices if they receive no information on a policy issue. Given that the payoff is the same in each state and that each is equally likely, we assume the policymaker is equally likely to choose p_l or p_r.[19,20] Now suppose that a policymaker receives a message from special interest i with the salience draw s_i. Clearly, the special interest will not be informative. The logic is straightforward; suppose that any message sent by the special interest is believed by the policymaker who then chooses p_l if they receive the message $m_i = \theta_l$ and p_r if they receive the message $m_i = \theta_r$, in this case, the special interest always sends the message $m_i = \theta_r$ whatever the realization of θ and hence the only equilibrium with the special interest sending messages involves no credible information transmission. The policymaker's and special interests' expected payoffs are then

$$\Pi_i = s_i/2, \text{ and } \Omega_i = 1/2. \tag{3.1}$$

Alternatively, the special interest may employ a commercial lobbyist to send a message; they are indifferent between policies, so we assume that they are truthful.[21,22] These would be believed by the policymaker. It then follows that if $\theta_i = \theta_r$ and the special interest employs a commercial

[19] If $\rho_l > \rho_r$, then clearly the policymaker would choose p_l, and vice versa. This does not affect any of our conclusions in this section. Also, note that the policymaker is better off mixing between p_l and p_r than p_n. The alternative, with a different payoff for p_n, creates no substantial differences.

[20] The case of a policymaker with a policy bias is considered Section 5.1.

[21] If the commercial lobbyist were biased or captured by her client, then footnote 2.1 is again relevant. We address this further in Section 4.1, which analyzes lobbying success fees. Note that all that is required of the one-shot game for our subsequent results to follow is that the sender's expected discounted payoffs from a sequence of one-shot games is less than from the repeated game. Hence, we adopt the simplest specification.

[22] Here, truth-telling by the commercial lobbyist may be thought of as the consequence of an arbitrarily small psychological cost associated with lying.

lobbyist, then the payoffs are

$$\Pi_i = s_i, \Omega_i = 1 - F, \text{ and } \Psi_i = F; \tag{3.2}$$

whereas if $\theta_i = \theta_l$ and the special interest employs a commercial lobbyist, then the payoffs are

$$\Pi_i = s_i, \Omega_i = -F, \text{ and } \Psi_i = F. \tag{3.3}$$

Hence, the special interest group will employ a commercial lobbyist if the state is θ_r and $F \leq \frac{1}{2}$, which follows immediately from the different values taken by Ω_i in (3.1) and (3.2); here the message $m_c = \theta_r$ is always sent and believed. Alternatively, if the state is θ_l, then the special interest will not employ the commercial lobbyist, and no message is sent – and this is revealing to the policymaker. If $F > \frac{1}{2}$, no commercial lobbyist is employed, and the equilibrium involves no credible information delivered by special interests. Notice that it appears that the commercial lobbyist is "captured" by the special interest as it only ever sends the message $m_c = \theta_r$; however, this is not the case. If the special interest group employed the commercial lobbyist in the state θ_l, then the message $m_c = \theta_l$ would be sent.

Suppose the policymaker has a limited ability to receive messages or enact policies. In that case, there will be an access cut-off with $\bar{s}$ such that all $s_i \geq \bar{s}$ will receive access to the policymaker. The probability that special interest i will receive access is $1 - G_i(\bar{s})$.

We can now summarize these strategies and state the equilibrium of the one-shot game.

Proposition 3.1. *The equilibrium to the one-shot game with $F \leq \frac{1}{2}$ involves:*

i) For any i such that $s_i < \bar{s}$ no message is sent and the policymaker chooses $p_i = p_n$;

ii) For any i such that $s_i \geq \bar{s}$ and $\theta_i = \theta_r$ the special interest employs a commercial lobbyist, the truthful message $m_c = \theta_r$ is sent, and the policymaker chooses $p_i = p_r$;

iii) For any i such that $s_i \geq \bar{s}$ and $\theta_i = \theta_l$ no message is sent, the policymaker infers $\theta_i = \theta_l$, and the policymaker chooses $p_i = p_l$.[23]

In the basic one-shot game, lobbying is either done by special interests and is non-informative ($F > \frac{1}{2}$) or by commercial lobbyists, and there is the full revelation of information for all sufficiently salient policy issues. There is no revelation of information for insufficiently salient issues,

[23]The proofs of our lemmas and propositions may be found in the appendix.

but by definition, the policymaker does not care about this. Furthermore, a commercial lobbyist provides special interest groups with a credible signal which allows them to separate from others and signal the world's true state if they wish to do so. To this end, the commercial lobbyist's fee should not be so expensive as to prevent their use ($F \leq \frac{1}{2}$). This is different from other applications of costly signaling in lobbying where the magnitude of spending ("money burning") is informative (Austen-Smith and Banks, 2000).

Clearly, then, to explain the division of lobbying between special interest and commercial lobbyists requires a richer set of possibilities; hence, we now assume the game is infinitely repeated.

3.2 The Infinitely Repeated Game

The one-shot game is played repeatedly with a discount rate of δ. As usual, δ may be thought to include the probability that the game will end and may be interpreted as a measure of policymaker security. Clearly, repetition enlarges the strategy space; specifically, it allows the policymaker to use the "grim trigger" if they choose. We shall show that there exists an equilibrium in which the policymaker will apply the grim trigger both to special interests and commercial lobbyists. This is consistent with various observations that lobbyists are heavily punished for misrepresenting information. For example, Ornstein and Elder (1978) quote, "you can't afford to lie to a member of Congress because if you lose access you've had it" (p.77). Similarly, Rosenthal (1993) states a "lobbyist can deceive a legislator, but only once" (p.121), and Ainsworth (2002) explains that "by denying all future access in response to a lobbyist's uncooperative behavior, a legislator is employing a strategy frequently labeled permanent retaliation" (p.132).

Suppose for the moment we maintain the assumption that the policymaker employs the grim trigger – punishing any player, either special interest or commercial lobbyist, that does not send a truthful message by denying them future access.[24] In other words, the individual "in-house" or "out-of-house" representative is punished but not the issue itself, meaning the issue can receive consideration if represented by someone else. This distinction in punishment is exactly as described in the anecdotes and evidence above. We will establish shortly that this form of punishment is an equilibrium strategy for the policymaker. We also want to note

[24]The policymaker could employ punishment strategies other than the grim trigger; for example, the reversion to one-shot Nash could be for a finite number of periods, or the reversion only takes place if the lobby lies too often. These all generate different equilibria, but their properties only differ quantitatively from the equilibrium with the grim trigger. Hence, we do not extend the model along these lines.

that punishing the issue rather than the untruthful "in-house" or commercial lobbyist is not optimal for the policymaker as the issue itself might be sufficiently salient in the future, and the policymaker can always induce truth-telling by a competitive commercial lobbyist representing the special interest group in equilibrium. In other words, a loss in the special interest group's credibility would imply costly credible representation by a commercial lobbyist and turnover in the group's lobbyist. For the commercial lobbyist, this punishment of no future access means zero future income; for the special interest, this means that they can only send messages indirectly by employing a commercial lobbyist. We may now demonstrate that

Proposition 3.2. *A special interest group*

i) will send a truthful message if $\theta_i = \theta_r$*;*

ii) will send no message if $\theta_i = \theta_l$ *and* $F \geq \frac{2(1-\delta)}{\delta[1-G_i(\bar{s})]}$*, revealing the true state;*

iii) can reveal no information if $\theta_i = \theta_l$ *and* $F < \frac{2(1-\delta)}{\delta[1-G_i(\bar{s})]}$*.*

The intuition here is that the special interests group's gain should they cheat and send the message $m_i = \theta_r$ today when the state is θ_l is less than the future punishment. The punishment is having to incur the cost of employing a commercial lobbyist F multiplied by the probability that the policy issue will be sufficiently salient to receive the policymaker's attention, $1 - G_i(\bar{s})$, appropriately discounted. If $\theta_i = \theta_l$, the special interest does not employ a commercial lobbyist and does not lobby. Since $\rho_l = 1/2$, this explains the "2" in the expression. No lobbying is, hence, state-revealing to the policymaker.

Proposition 3.2 now implicitly defines the marginally truthful special interest by the issue $\bar{i}$ such that,

$$G_{\bar{i}}(\bar{s}) = 1 - \frac{2(1-\delta)}{\delta F}. \tag{3.4}$$

Now we know by first-order stochastic dominance that $G_i(\bar{s}) > G_{i+1}(\bar{s})$; it then follows that all special interests $i \in \{1, ..., \bar{i} - 1\}$ will be uninformative if they send signals to policymakers, and all messages sent by special interests $i \in \{\bar{i}, ..., I\}$ will be truthful.

Proposition 3.3. *The count of the set of special interests that may send truthful messages is; (i) increasing in* F*, (ii) decreasing in* $\bar{s}$*, and (iii) increasing in* δ*.*

Our predictions (i)-(iii) all work through the grim trigger, and (i) and (iii) follow immediately from (3.4). The commercial lobbyist's fee plays a different role here compared to the one-shot

game, as a commercial lobbyist's signal is not only credible, but its cost affects the truth-telling incentives of special interests. The higher the market fee, the more truth-telling by special interest groups in the repeated game. In (ii), a higher $\bar{s}$ makes it less likely that any special interest will achieve the critical level of salience in each future period and thus reduces the effectiveness of the grim trigger to induce truth-telling. This is immediate from (3.4) and first-order stochastic dominance. We have

Corollary 3.1. *Special interests $i \in \{1, 2, .., \bar{i}-1\}$, if they lobby, do so by employing a commercial lobbyist who sends truthful messages. Special interests $i \in \{\bar{i}, ..., I\}$ directly send truthful messages to policymakers when lobbying.*

Notice that this implies that the size of the commercial lobbying industry grows as $\bar{s}$ increases, which may be due to policymakers having less time to devote to policy-making rather than politics.[25] This is somewhat related to Groll and Ellis (2017), where less access to policymakers results in a shift in the relative time allocated to special interests and commercial lobbyists. The reason is that commercial lobbyists possess economies of scale in bundling clients' financial contributions and acquiring their own information, making exchanges with policymakers more efficient. Here we illustrated that tighter access to a policymaker implies fewer incentives for special interests to report truthfully. Therefore, the equilibrium involves greater access and more clients for commercial lobbyists.

3.2.1 Equilibrium

Given that the policymaker adopts the grim trigger, we have shown how the special interests and commercial lobbyists will behave. To construct the equilibrium, we need to demonstrate that the policymaker finds it best to play the grim trigger if the circumstances require it. Therefore, suppose that the special interest always reports $m_i = \theta_r$ irrespective of the true state of the world. Now suppose that the realized state is θ_l. If the policymaker does not enforce the grim trigger, then the special interests will not send informative messages, and the policymaker's expected payoff should they choose a policy on the issue is $s_i/2$. Given the salience cut-off $\bar{s}$, the policymaker will only choose a policy on the issue if $s_i/2 \geq \bar{s}$. We can immediately state.

[25] For example, Lessig (2011) estimates that U.S. Congress members spend between 30 to 70 percent of their time nowadays on campaigning and fundraising due to increased electoral competition and costs. Similarly, Ellis and Groll (2020) demonstrate that for some years, resources spent lobbying have been increasing while Congressional resources and committee meetings have been decreasing.

Lemma 3.1. *If the special interest group deviates from truth-telling, then playing the grim trigger is payoff maximizing and, therefore, the best response for the policymaker.*

Lemma 3.1 completes the construction of the equilibrium for the infinitely repeated game.[26] The baseline model tells us how the requisite incentives for truth-telling create a division in the lobbying industry between special interests lobbying directly and commercial lobbyists offering intermediation. Special interests with frequently salient topics form personal relationships with policymakers, allowing them to provide truthful information, whereas other special interests with less frequently salient topics hire commercial lobbyists as "costly signals." In other words, the lack of incentives for some special interests to transmit information truthfully when proposals are not sufficiently salient over time creates a demand for intermediation services, allowing for-profit commercial lobbyists to enter the lobbying market. As a consequence, policymakers receive more information and make better-informed policy choices. Next, we show that these incentives for truth-telling by special interests and commercial lobbyists are robust or actually increasing when we consider money in lobbying.

4 Implications of Money in Lobbying

Money plays a substantial role in politics and lobbying and has been subject to significant regulatory attention.[27] For example, in the United States, paying lobbyists success fees for winning federal contracts is forbidden. For other types of lobbying activities, success fees are heavily regulated and subject to stringent reporting requirements.[28] Such restrictions arose because of their potentially deleterious effects on lobbyists' incentives to reveal information truthfully and because they led to the lobbyists being captured by their clients, namely special interests – "decision-based rewards" as in Dewatripont and Tirole (1999). Here we consider the potential effects of lobbying success fees on lobbyists and financial contributions on policymakers.

[26] There is an alternative equilibrium in which the policymaker allocates all access to the commercial lobbyist, applies the grim strategy towards them, and special interest groups hire the truth-telling commercial lobbyist. As both equilibria involve truth-telling and the policymaker does not bear any costs, the policymaker is indifferent. Empirically, we observe both types of lobbyist receiving access (Bertrand et al., 2014), and policymakers may have difficulty justifying crowding out citizens and special interests from political access (petitioning rules) without proper cause. However, when we consider side payments later, we argue that the policymaker may prefer the equilibrium with both types of lobbyists receiving access, facing the grim trigger, and delivering lobbying resources.

[27] In the United States, lobbying at the federal level is regulated by *Lobbying Disclosure Act of 1995* (LDA) for domestic interests and by the *Foreign Agent Registration Act* (FARA) for foreign interests. For a global comparison of lobbying regulation, see Chari et al. (2010).

[28] See the *Lobbying Disclosure Act Guidance* published by the *Office of the Clerk of the U.S. House of Representatives* which oversees the reporting of federal lobbying activities.

Our analysis shows that *in equilibrium, special interest groups do not want to incentivize lobbyists with success fees* as this would eliminate their ability to truthfully transmit information to policymakers. We also consider the implications of financial contributions when they are used either to gain a policymaker's attention or to enhance their ability to enact policies. Our results highlight that special interests with intermediate salient topics make side payments and that, perhaps counter-intuitively, these payments do not crowd out information but rather increase truth-telling by special interests.

4.1 Lobbying Success Fees

It might seem that special interests can gain from incentivizing a commercial lobbyist to report that the state is θ_r more frequently. This might be accomplished by making the fee contingent either on the lobbyist's message $m_c = \theta_r$ or the realization of the policy p_r. However, both of these options always lead to the commercial lobbyist being biased and uninformative. If this is the case, the special interest group would have no incentive to employ them in the first place as they could send uninformative messages directly at a lower cost. To see this, consider the following; for some realization of the state θ_l let the special interest employ the commercial lobbyist and have them send the false message $m_c = \theta_r$ with some non-zero probability, λ. In principle, the policymaker would be willing to tolerate some small λ as the message sent by the commercial lobbyist is truthful with a high probability. However, suppose that the policymaker is a Bayesian who updates their belief about the frequency with which false messages are sent: beliefs about λ. Whenever they believe λ is sufficiently small, then the interest group can choose $\lambda = 1$ without the update triggering the policymaker to play the punishment strategy. However, all the players can work this out and understand that $m_c = \theta_r$ is just uninformative and will be so for all subsequent periods. It then follows that

Proposition 4.1. *The special interest gains no benefit from paying the commercial lobbyist a lobbying success fee and declines to do so.*

Our analysis shows that *interest groups do not want to incentivize lobbyists with success fees* as this would eliminate their ability to transmit information to policymakers credibly. Indeed all players are hurt by this option, suggesting that regulatory concerns about lobbying success fees may be overstated at least when there is transparency about lobbyists' compensation schemes,

and policymakers can infer the commercial lobbyists' incentives to misrepresent information.[29]

Our results rely on the assumption that a policymaker observes the client-lobbyist relationships and payments. Ironically, most lobbying regulation and transparency requirements have in common that clients and lobbyists have to reveal their relationships (names, amounts, issues, etc.) but not necessarily lobbying contacts, such as the names of politicians or bureaucrats under the Lobbying Disclosure Act of 1995 in the United States. The current regulation of domestic lobbying seems more concerned with informing politicians about client-lobbyist relationships and their potential dependencies rather than informing the public about special interests' influence on policymakers.[30]

4.2 Side Payments for Access

The baseline model considers only the exchange of policymaker time for information. Access is purchased by truth-telling, the worth of which depends on policy issue salience. However, it is well understood that lobbies also exchange other resources for policy favors, which has created significant regulatory concerns regarding the quality of policy outcomes.[31] We now consider the implications of transfers from special interests to policymakers. These can be viewed as representing payments used to either gain a policymaker's attention and access (Austen-Smith, 1995; Lohmann, 1995; Austen-Smith, 1998; Cotton, 2009, 2012; Cotton and Dellis, 2016; Schnakenberg, 2017) or to enhance a policymaker's ability to enact policies (Hall and Deardorff, 2006; Ellis and Groll, 2020). The questions that arise are who pays how much to whom and why, and how do side payments affect our results concerning information transmission?

To analyze the implications of side payments, we first need to modify the policymaker's expected payoff function. We assume that for any issue $i \in I$, it becomes

$$\Pi_i = E[\mathscr{P}_i(p \mid s, \theta)|m_i, m_c] + E[\mathscr{Z}_i(s, \theta)], \tag{4.1}$$

where $E[\mathscr{Z}_i(s, \theta)]$ is the expected side payment that could potentially depend on both salience

[29] For example, the *Lobbying Disclosure Act Guidance* states that such contingent fees are forbidden (for government contracts) or have to be made transparent.

[30] This is different from the regulation of foreign lobbying in the United States under the Foreign Agent Registration Act, where lobbyists are required means and names of their lobbying contacts and also contrasts to campaign finance regulation.

[31] For example, Bennedsen and Feldmann (2006), Dahm and Porteiro (2008a,b), Groll and Ellis (2014, 2017), and Schnakenberg and Turner (2019) consider the strategic considerations of providing relevant information or financial contributions. In these models, financial contributions for policy favors and information are substitutes. With an alternative focus Bombardini and Trebbi (2011) analyze the relationship between the size of an interest group and its strategic use of voter representation or campaign contributions to influence policymakers.

and the state. We shall consider only side payments made ex-post after the salience and state realization are observed. Ex-ante payments are sunk and have no significant consequences for our analysis. Further, in our baseline model, salience and the policymaker's payoffs were synonymous, now they consist of both salience and side payments; hence, the policy issues to which the policymaker devotes attention also depend on both forms of benefit. We now define $\bar{\pi}$ as the opportunity cost of the policymaker's time, such that only those lobbies that offer $\bar{\pi}$ may receive access. We employ the baseline model's simple payoff structure in this section except for such side payments. Assume for the moment that we know which special interests lobby directly and which use commercial lobbyists. We may state

Lemma 4.1. *For special interests that lobby directly*

i) $s_i \in [0, \bar{\pi} - 1]$ *receive no access and make no side payments;*

ii) $s_i \in [\bar{\pi} - 1, \bar{\pi}]$ *receive access and make side payments of* $z_i = \bar{\pi} - s_i$*;*

iii) $s_i \in [\bar{\pi}, S]$ *receive access and make no side payments.*

For special interests that lobby via commercial lobbyists

i) $s_i \in [0, \bar{\pi} - 1 + F]$ *receive no access and make no side payments;*

ii) $s_i \in [\bar{\pi} - 1 + F, \bar{\pi}]$ *receive access and make side payments of* $z_i = \bar{\pi} - s_i$*;*

iii) $s_i \in [\bar{\pi}, S]$ *receive access and make no side payments.*

This lemma tells us that those special interests and commercial lobbyists that cannot "afford" $\bar{\pi}$, fail to lobby, and those that can "afford" $\bar{\pi}$ without making a side payment get access based one salience alone, and those in the intermediate range need to "top-up" their salience with a side payment. Following the same procedure as in the baseline model, we can derive the truth-telling conditions for the special interest group, given that the policymaker again adopts the grim strategy. We obtain

Proposition 4.2. *With side payments and if* $\theta_i = \theta_r$*, the special interest group will send a truthful message to the policymaker. However, if* $\theta_i = \theta_l$ *and the following condition holds*

$$F \geq \frac{2(1-\delta)}{\delta(1 - G_i(\bar{\pi}))} - \frac{\int_{\bar{\pi}-1}^{\bar{\pi}-1+F} (1 - \bar{\pi} + s) g_i(s) ds}{(1 - G_i(\bar{\pi}))} - \frac{\int_{\bar{\pi}-1+F}^{\bar{\pi}} F g_i(s) ds}{(1 - G_i(\bar{\pi}))},$$

then the special interest group will not send a message to the policymaker, which will be state-revealing.

So Proposition 4.2 implies that the marginally truthful special interest is that $\hat{i}$ which satisfies

$$\int_{\bar{\pi}-1}^{\bar{\pi}-1+F}(1-\bar{\pi}+s_i)g_i(s)ds+\int_{\bar{\pi}-1+F}^{\bar{\pi}}Fg_i(s)ds-G_i(\bar{\pi})F=\frac{2(1-\delta)}{\delta}-F. \tag{4.2}$$

Using (3.4) and (4.2), we may compare the equilibria with and without side payments. The results may be summarized as

Proposition 4.3. *In comparison to the case without side payment, we find that side payments involve:*

i) More truth-telling by special interests in the sense $\bar{i}>\hat{i}$*;*

ii) More lobbying by special interests;

iii) More lobbying in total.

That there is more truth-telling by special interests when side-payments are permitted follows from the fact that side-payments allow more special interest groups to deliver $\bar{\pi}$ in the current period, and given the fixed salience distributions, more of them expect to be able to do so in future periods. Policymakers and special interest groups thus anticipate more frequent interactions, enhancing the grim trigger's ability to induce truth-telling. It follows that there is more lobbying by special interests. There is also more lobbying in total since special interests with relatively low salience policy proposals that would not, in the absence of side payments, achieve access to a policymaker can now employ commercial lobbyists to obtain access and have the commercial lobbyist deliver the side payment to the policymaker on their behalf. Notice that the implication here is that limiting side payments would have negative effects. Less truthful information would be passed from special interest groups to policymakers who would enact fewer correct policies. This is because side payments enhance the ability of the trigger strategy to induce truth-telling by special interests and also induce the policymaker to consider more policy proposals.[32] In sum, these side payments are complementary to information and do not crowd it out as in

[32]While not explicitly modeled in our analysis, it seems clear that in the presence of side payments, the policymaker would prefer the equilibrium that involves lobbying by both special interests and commercial lobbyists. With direct access, the special interest group does not have to pay the lobbying fee F. It would be willing to pay the amount in the form of side payments to the policymaker, which would be preferred as it would cut out a costly "middleman" without giving the benefits of truthful reporting.

Bennedsen and Feldmann (2006), Dahm and Porteiro (2008a,b), or Groll and Ellis (2014, 2017) where contributions are a substitute and the number of enacted policies fixed.

5 Implications of Ideology, Policies, and Politics

In the following, we consider a couple of extensions to our baseline model and illustrate that the results are robust to a richer set of assumptions regarding policies and political institutions.[33] Specifically, we may; (i) vary the policymaker's payoffs to allow for ideological biases, (ii) let the state be imperfectly observable, (iii) consider issues that take several periods to realize a payoff, and (iv) vary the political environment by allowing policymakers to have different salience distribution orderings.[34]

5.1 Ideologically Motivated Policymakers

So far, we have assumed that policymakers only care about choosing the "correct" policy and have no political bias or ideology. This is an idealization. Suppose instead that a policymaker's preferences have an ideological bias as illustrated in Table 3.

		Policy		
		p_l	p_r	p_n
State	θ_l	$a(s_i)$	$b(s_i)$	0
	θ_r	$c(s_i)$	$d(s_i)$	0

Table 3: Policymaker's Ideology and Generalized Payoff.

We distinguish between *purely ideological* policymakers who always prefer policy p_l or p_r ($c = a = 0$, $b = d = 1$ or $c = a = 1$, $b = d = 0$) and *partially ideological* policymakers who want to match the state of the world but lean towards p_l or p_r in the absence of information ($0 = b < c < a = d = 1$ or $0 = c < b < a = d = 1$).

We have immediately

Lemma 5.1. *Purely ideologically motivated policymakers are not lobbied.*

Since purely ideologically motivated policymakers are unresponsive to messages, even if truthful, it follows that neither type of lobby will lobby them. However, we get

[33] Allowing for uncertainty as to whether the policymaker implements the policy after lobbying has no substantial implications for the results and produces similar empirical predictions regarding truth-telling, repeated interactions, and the division in lobbying.

[34] In Appendix A, we also provide an analysis of (a) a more general payoff structure for special interests and (b) the model with a continuous state space.

Proposition 5.1. *Partially ideologically motivated policymakers are only lobbied by special interest groups with the opposite political ideology or by a commercial lobbyist.*

The vital element is that if there is no (credible) information, then a policymaker's ideology determines their policy choice. It follows that a special interest that shares the policymaker's ideology will never employ a commercial lobbyist to act on their behalf; furthermore, the special interest will always be uninformative themselves as they lose nothing if the policymaker reverts to the grim trigger. However, a special interest group that does not share the policymaker's ideology wishes to avoid the outcome that arises without credible information either by truth-telling themselves or by employing a commercial lobbyist. Indeed, they are willing to pay a fee above F for the commercial lobbyist's services to be credible.[35]

Our results here relate to models of informational lobbying with multiple senders, where a single sender is associated with each issue and in which policymakers gain from the messages delivered by oppositely biased interests. In contrast, in the models of Dewatripont and Tirole (1999) and Krishna and Morgan (2001), there are multiple senders for a single issue, and competition generates finer information.[36]

5.2 Uncertainty over the Observability of States

When the policymaker's payoff takes a simple monetary form, it is clear that even if the actual state of the world is unobservable, they can deduce it from their payoff. However, often, the payoff is in the form of expected future political support or political popularity, and these forms of payoff are often difficult to observe. We suppose then that the likelihood that the policymaker will observe (or deduce) the state associated with issue i ex-post is given by probability q_i. We may now derive the conditions under which a lobby will be truthful in the infinitely repeated game with uncertainty over the observability of the state; we have

Proposition 5.2. *With uncertainty over the observability of the state, a special interest group i will send truthful messages if $\theta_i = \theta_r$. However, if $\theta_i = \theta_l$ and the following condition holds $F \geq \frac{2(1-\delta)}{\delta q_i[1-G_i(\bar{s})]} - \frac{(1-q_i)(1-\delta)}{q_i}$, then the special interest group will not send a message to the policymaker and this will be state-revealing.*

[35] In equilibrium, a special interest group with sufficient salience facing an opposite-biased policymaker would be willing to pay either $F \leq 1$ to a commercial lobbyist to persuade the policymaker as a credible signal or nothing. This is different from an interest group's willingness to pay if the policymaker was neutral, $F \leq 1/2$.

[36] We omit the repeated game here, as it does not provide any new insights because the truth-telling incentives do not differ significantly from those in the standard repeated game where the policymaker employs the grim trigger.

We can also state

Corollary 5.1. *A special interest group that is marginally truthful under full observability of the state is untruthful and must employ a commercial lobbyist when there is uncertain observability; that is* $\frac{2(1-\delta)}{\delta[1-G_i(\bar{s})]} = F \leq \frac{2(1-\delta)}{\delta q_i[1-G_i(\bar{s})]} - \frac{(1-q_i)(1-\delta)}{q_i}$.

The proposition and corollary tell us that issues that involve states that are not readily observable will tend, all else equal, to be lobbied on by commercial lobbyists.

5.3 Long-Term vs. Short-Term Policies

Some policies have almost immediate effects, while others, such as decisions to engage in long-term infrastructure investments, may take several years to generate the policymaker's payoff. This has two consequences; first, the policymaker will discount future returns and will be less inclined to listen to lobbying messages on these issues. Essentially, these issues may be thought of as lower-ranked (using stochastic dominance) in terms of the expected salience distributions and tend to be less likely to make the required salience, $\bar{s}$. Second, and perhaps more interestingly, issues that take longer to realize payoffs may also take longer for the policymaker to deduce the state. Since the policymaker must wait until the state is revealed or learned before punishing any untruthful special interest group, there is thus less incentive for truth-telling. Denoting by h as the number of periods until the state is revealed, we immediately have

Proposition 5.3. *A special interest group i that lobbies on an issue that takes h periods after a policy is chosen to return a payoff will send truthful messages if $\theta_i = \theta_r$. However, if $\theta_i = \theta_l$ and the following condition holds $F \geq \frac{2(1-\delta)}{\delta^h[1-G_i(\bar{s}]} + \frac{\delta-\delta^h}{\delta^h}$, then the special interest group will not send a message to the policymaker and this will be state-revealing.*

The immediate observation from Proposition 5.3 is that since $\frac{2(1-\delta)}{\delta^h[1-G_i(\bar{s}]} + \frac{\delta-\delta^h}{\delta^h}$ is increasing in h, it is more difficult for a policymaker to induce truth-telling by a special interest group the longer term is the policy issue being lobbied on. The further implication is that all else equal, long-term projects are lobbied on more by commercial lobbyists and short-term ones more by special interest groups directly.

5.4 Political Turnover and the Composition of Lobbying

In this part, we explore the implications of exogenous changes in the political environment for the composition of lobbying. For example, a policymaker may leave public office and be replaced

by a successor due to political instability, elections, term limits, retirement, and numerous other causes. Some of these turnover-causing events may be anticipated, others not. We ask how turnover affects the division in lobbying and the formation of relationships.

5.4.1 Known Policymaker Changes

Policymakers' identities and political ideologies change frequently and often at regular intervals. In the structure of our analysis, this has two potential implications. The first is that an issue with a given degree of salience to an incumbent policymaker may be more or less salient to their successor. The second and related implication is that punishment may not be credibly threatened by one policymaker as their successor may not continue it. This might be because it may not be apparent whether a special interest group did not attempt to lobby their predecessor or was punished with a lack of access.

We begin with a simple situation where there is a single change in a policymaker that occurs τ periods in the future. Further, the change involves switching between policymakers of two types, denoted l and r as in Section 5.1.[37] Also let the expected salience distributions on issue i be $G_i^l(s)$ and $G_i^r(s)$, respectively. We shall assume that for issue i $G_i^l(s)$ first-order stochastically dominates $G_i^r(s)$ – i.e., issue i is more important to a type r policymaker.[38]

We may now examine the effects of a policymaker's turnover on lobbying and state

Proposition 5.4. *The following conditions determine the possible patterns in the composition of lobbying*

i) If $F > \frac{2}{\delta[1-G_i^r(\bar{s}]}$, *then all lobbying in all periods on issue* i *is performed by a truth-telling special interest group.*

ii) If $\frac{2}{\delta[1-G_i^r(\bar{s}]} > F > max\left\{\frac{2(1-\delta)}{\delta[1-G_i^r(\bar{s}]}, \frac{2}{\delta[1-G_i^l(\bar{s}]}\right\}$ *and if the incumbent policymaker is an* r*-type that will subsequently be replaced by an* l*-type, then lobbying in the periods before the policymaker change is performed by a commercial lobbyist, while after the policymaker change lobbying is performed by the special interest group.*

iii) If $\min\left\{\frac{2(1-\delta)}{\delta[1-G_i^r(\bar{s}]}, \frac{2}{\delta[1-G_i^l(\bar{s}]}\right\} > F > \frac{2(1-\delta)}{\delta[1-G_i^l(\bar{s}]}$ *and if the incumbent policymaker is an* r*-type that will subsequently be replaced by an* l*-type, then lobbying in the periods before the*

[37] The change could be probabilistic, but since all that is required for the results is that the type of the known incumbent differs from the expected type of their successor we adopt this simplification.

[38] Notice of course that if we reverse the assumption that $G_i^l(s)$ first-order stochastically dominates $G_i^r(s)$, then all of the statements in the proposition hold with a reversal of the roles of l and r types.

policymaker change is performed by a special interest group, while after the policymaker change lobbying is performed by a commercial lobbyist.

iv) If $F < \frac{2(1-\delta)}{\delta[1-G_i^l(\bar{s}]}$*, then all lobbying in all periods on issue* i *is performed by a commercial lobbyist.*

It follows that inter-temporal patterns in the type of policymakers induce inter-temporal patterns in the composition of lobbying. In other words, political and ideological turnover creates a form of *political lobbying cycles*.

5.4.2 Uncertain Policymaker Changes

Suppose now that the change between policymaker types is probabilistic. Let $\rho_k,\ k \in \{r, l\}$ be the probability that a policymaker of a k-type policymaker will replace a type $-k$ that occurs again τ periods in the future. This undermines the policymaker's ability to use the grim trigger to incentivize a special interest group to truth-tell. Hence, we may state

Proposition 5.5. *The greater is political instability in the sense that* ρ_k *is larger, then lobbying on any issue* i *is less likely, in the sense that all of the necessary truth-telling conditions on the fee* F *are strictly tighter, to be conducted by a special interest group.*

Suppose a policymaker of one type is not able, for any reason, to commit to enforcing the grim trigger threatened by a preceding policymaker. In that case, it may not be possible to incentivize a special interest group to reveal information truthfully. This leads then to lobbying being performed by a commercial lobbyist. Hence, we might conclude that political instability is good for the commercial lobbying industry.

6 Discussion and Conclusion

Our theory provides a series of predictions, evidence on some already exists, and others are, in principle, testable. In the following, we summarize and discuss our empirically interesting findings. We can distinguish between predictions on questions of *who lobbies whom* and on *who lobbies on what* and how they rely on the nature of policies and the political environment. However, given the data generated under current lobbying regulations, our predictions highlight the empirical challenges that arise. We address this first.

Current lobbying regulation in the United States requires lobbyists to report their domestic lobbying activities under the Lobbying Disclosure Act of 1995 (LDA) and foreign lobbying activities under the Foreign Agent Registration Act of 1995 (FARA).[39] The LDA reports include characteristics and names of lobbyists, their clients, lobbying expenses/revenues, and broad categories of issues and lobbied agencies such as the Senate, House of Representatives, Environmental Protection Agency, or Department of the Treasury. Some reports also include voluntary descriptions of the issues/bills lobbied on and names of policymakers contacted. However, the LDA reports do not allow for a directly observable link between special interests, lobbyists, policies, and policymakers, as policymaker names are missing. The quarterly reports summarize activities across many policy issues within broad categories (e.g., defense, trade, health issues) instead of specific bills or rules over which policymakers decide. The activities are also across many policymakers (e.g., Senators, Representatives, Congressional staffers, appointed agency heads, and bureaucrats), and individual contacts and decisions cannot be tracked.[40] There is also a growing trend in shadow lobbying activities in which special interests and lobbyists do not report their activities due to low enforcement of the LDA (Thomas and LaPira, 2017; d'Este et al., 2020). The FARA requires that lobbyists report the names of contacted officials, including the type of communication. However, foreign lobbying in the United States is almost exclusively undertaken by commercial lobbyists representing foreign clients (Kang and You, 2018; You, 2022), and may not supply appropriate data to test our predictions concerning in-house vs. commercial lobbying.

In Europe, despite there being a wide range of lobbying regulations regarding registrations, reporting, and transparency at both national and supranational levels, the identity of one key actor is missing (Chari et al. (2010)). For example, the European Commission reports meetings with lobbyists. These reports include the names of EU commissioners, cabinet members, and other bureaucrats as well as the participating special interest group organizations – but do not provide the names and types of lobbyists involved, making it challenging to infer whether in-house or commercial lobbyists participated around specific issues.[41]

Despite the empirical challenges raised by the lack of transparency in reporting under the

[39] See You (2020) for a description and discussion of the FARA regulation and data.

[40] Empirical studies have used proxies to establish linkages between lobbyists and policymakers. Blanes i Vidal et al. (2012) use the lobbyists' reported work history and establish revolving door patterns of lobbyists and policymakers. However, revolving door lobbyists tend to be a subset of all lobbyists, and there is no link to the specific policy issue and any decision. Bertrand et al. (2014) focus on a broader set of lobbyists and consider the linkages through lobbyists' campaign contributions to politicians. This approach limits activities to legislative lobbying but also misses the specific policy issues lobbied and decided on.

[41] The information for commission meetings is provided by Transparency International EU on `https://www.integritywatch.eu/ecmeetings`.

current lobbying regulations, we nevertheless may discuss our model's predictions in light of the established findings and received wisdom on who lobbies whom and on what.

6.1 Policy Salience

We have shown that special interests with consistently high levels of expected salience lobby policymakers directly and establish lasting work relationships with them. Furthermore, our theory suggests that special interests that lobby directly will target those policymakers for whom an issue is highly salient and enjoys high expected future salience. For example, special interest groups lobbying on ongoing "hot-button" issues such as gun control, reproductive rights, or the environment are predicted to lobby directly. Similarly, multinational firms may establish in-house lobbying capacities in areas such as taxation, trade, and immigration, as these involve issues frequently highly salient to policymakers. Financial institutions are in a similar situation. They face a dynamic regulatory environment and frequent attention. This requires they maintain in-house lobbying capacity to represent their interests to congressional committees and federal agencies such as the Federal Deposit Insurance Corp. (FDIC), the Federal Reserve Board (FRB), and the Securities and Exchange Commission (SEC). However, they also lobby on less frequently salient policy issues or decisions that require broader support from policymakers, such as votes in the House or Senate. Hence, the dramatic increase in lobbying by commercial lobbyists after the financial crisis and the consequent regulatory overhaul following the passage of the *Dodd-Frank Wall Street Reform and Consumer Protection Act*, and especially the "Volcker Rule."

Special interests with intermediate levels of expected salience would monitor the political environment and hire commercial lobbyists when their policy objectives become sufficiently salient. For example, Espinosa (2021) provides a model and empirical analysis of in-house vs. out-of-house production of lobbying services. They document how British Petroleum (BP) changed its composition of lobbying towards commercial lobbying in the aftermath of the Deepwater Horizon explosion and oil spill and the Obama administration's establishment of a special commission to investigate the event's causes and consequences. Espinosa (2021) argues that BP's issue-skill requirements changed due to the investigation and potential regulatory consequences and that they responded by outsourcing lobbying to increase outside issue-specific expertise. Our theory provides a complementary explanation. The issue suddenly became highly salient to policymakers, and a regulatory response was almost certain. BP probably did not anticipate the disaster and political aftermath and hence had not built appropriate relationships in advance (if it had

been done, it might have also raised flags about their drilling activities). However, suddenly, it needed credible advocacy to limit the regulatory consequences. Yet the event was unlikely to be repeated, so expected future salience remained low. These are the circumstances in which our theory predicts nicely BP's observed shift towards utilizing commercial lobbyists. We conclude that BP may have not just hired commercial lobbyists for support on issue-specific expertise, but also to realize credibility when trying to minimize the regulatory fallout from the event.[42]

6.2 Mix of Lobbyists – Specialization, Expectations, Multiple Targets, and Issues

Our theory focused on special interest groups with a single issue and issue-specific reputations for truth-telling. In reality, lobbying reports document that special interest groups often employ in-house and commercial lobbyists on an issue. It is easy to see how this can be consistent with the theory we developed above. Consider the following, the senior decision-makers of a special interest group always wish to have policymakers adopt policies favorable to their cause. However, they do not necessarily know when it is feasible to realize these policies and which policymakers to approach in their pursuit. They do not necessarily have good information about current and expected future salience and to which policymakers this salience is most important. One role of in-house lobbyists is to monitor salience and advise senior decision-makers on when lobbying is likely to be productive, whom to lobby, and by what means, whether to recommend they lobby in-house or employ commercial lobbyists. In a sense, this is the expertise possessed by in-house lobbyists.

A special interest group that enjoys both high current and expected future salience will perform all lobbying functions in-house. The right time for the special interest to lobby is now, and its in-house representative can credibly transmit information to policymakers. However, if the expected salience is at some intermediate level, in-house lobbyists may not be able to transmit information credibly; this function needs to be performed by commercial lobbyists. However, there remains a watchdog role for in-house lobbyists to monitor current salience and advise which policymakers should be lobbied if high salience is observed. Then, when the time is right, they advise senior decision-makers to lobby via commercial lobbyists. In this sense, both types of lobbyists are involved.

[42] Similarly, Chan (2022) uses an interview-based approach that documents that special interests hire commercial lobbyists when there is a need for additional lobbying support or there are "tough conversations" with policymakers that require "familiar faces," providing both intermediation services and credibility.

Similarly, unexpected changes in expected salience can also explain the switch in interest groups' use of in-house and commercial lobbyists. For example, policy issues that have been more or less salient in the past can receive less or more attention, requiring special interests to change their use of in-house lobbyists. Policy issues that would become less salient in the future would result in special interests switching from in-house to commercial lobbyists (highly salient becoming intermediate salient), no longer hiring commercial lobbyists and dropping out of lobbying activities (intermediate salience decreasing to low expected salience), terminating in-house lobbyists and exiting lobbying activities (highly salient issue evolving to low expected salience). In contrast, special interests that relied on hired guns in the past may build up an in-house lobbying unit when their policy issues of interest are expected to gain policy salience over time. These changes in expected salience can explain entry, exit, or switching in lobbying activities.

It is also the case that, in reality, special interests lobby on multiple issues and approach multiple policymakers. Further, they employ different lobbying strategies across issues and policymakers. This, too, can be explained by examining which type of lobbyist can credibly transmit information to a policymaker and on which issues. The key observation is that salience varies over time and across policymakers. Consider a utility provider that may lobby a Senator on the Energy and Natural Resource Committee on an infrastructure project and a general tax or labor issue. Because of their committee responsibilities, the infrastructure project may always be highly salient to the policymaker. The special interest group will employ in-house lobbyists to transmit information to them credibly. Other senators with different committee assignments may rarely find policies on infrastructure projects highly salient and need to be lobbied on behalf of the utility by commercial lobbyists. In turn, the senator on the Energy and Natural Resource Committee rarely finds tax and labor issues to be highly salient, so the utility cannot credibly transmit information to them on these issues using in-house lobbyists and must rely on commercial lobbyists in this case.

Anything that drives the salience distribution across policymakers and issues leads to these conclusions. For example, an industry located in a policymaker's home district would almost certainly generate high salience for them across issues related to that industry. Alternatively, some issues are always highly salient for ideological reasons. This might involve the ideology of the policymaker or the majority of their constituents.

Unfortunately, current lobbying reports list the names of lobbyists and clients, but not of

lobbied policymakers (beyond agency names) and bills or rules (beyond broad issue categories), so direct tests of these predictions are currently infeasible.

6.3 Ideology and Political Turnover

Our analysis showed that purely ideologically motivated policymakers would not be lobbied. In contrast, partially ideologically motivated policymakers are lobbied by opposite-biased special interests or commercial lobbyists acting as their credible representatives. This suggests that the information and resources flowing from lobbyists to policymakers may induce posturing. However, if a policymaker's legislative activities reveal themselves to be true ideologues over time, then their supply of resources from lobbyists should dry up.

Related to a policymaker's ideology is the policymaker's prospect of remaining in office and, thus, their ability to incentivize special interests and commercial lobbyists to transmit information truthfully. Our analysis tells us that an increase in the probability that the lobbying game and any relationships between policymakers and lobbyists will end implies that policymakers are lobbied less by special interests and more by commercial lobbyists. So policymakers with marginal seats would tend to be lobbied more by commercial lobbyists, as would policymakers approaching the end of their legislative careers. In the limit, policymakers who are sure that their careers will soon be over would cease interacting with lobbyists. Presumably, these individuals are likely to be more supportive of regulating lobbying.

Similarly, political turnover may affect the person in public office and the ideology of the successor. We showed that an increased probability of political and ideological change would affect the composition of lobbying, with an increase in the share of lobbying performed by commercial lobbyists. This implies that we should anticipate changes in the composition of lobbying across U.S. states, where swing states should display relatively more lobbying by commercial lobbyists.

Our results here have a different focus compared to empirical models of relationships between policymakers and lobbyists (Blanes i Vidal et al., 2012; Bertrand et al., 2014) as they focus on the implications of *realized* turnover on lobbyists' earnings and returns rather than *expected* turnover and forward-looking adaption regarding special interests' strategies, the composition of lobbyists' types, and the provision of information.

6.4 Policy Uncertainty

Our theory suggests that special interest groups lobby directly on policies and issues for which the results are more transparent as special interests are more able to transmit information in these circumstances truthfully. However, on less transparent issues, special interests face obstacles to establishing credibility, and they tend to hire commercial lobbyists to lobby on their behalf. For example, we might suggest that the results of foreign policies are designed to realize the support or goodwill of other nations, or perhaps the foreign benefits from domestic policies might be hard to observe. Comparing the type of lobbyists reporting domestic lobbying under the *Lobbying Disclosure Act of 1995* and lobbyists reporting lobbying on behalf of foreigners under the *Foreign Agent Registration Act of 1938* in the United States, we note that there is a growing trend in commercial lobbying in domestic federal lobbying with a balanced number of in-house and commercial lobbyists (Groll and Ellis, 2017). Still, commercial lobbying firms are responsible for more than 90 percent of lobbying contacts on behalf of foreign governments (Shepherd and You, 2020; Kang and You, 2018; You, 2022).

Similarly, we have shown that commercial lobbyists would represent special interests on policies and issues for which the results may be realized over longer time horizons as special interests lack the incentives to transmit information truthfully. This suggests that lobbying on policies such as infrastructure investments or significant regulatory change, which could perhaps take many years to prove to be well or ill-advised, is likely to be carried out by commercial lobbyists.

6.5 Conclusion

We have highlighted that truth-telling incentives differ between special interests and commercial lobbyists and that not all lobbyists can establish relationships with time-constrained policymakers. As some special interests are not associated with issues of sufficiently high expected salience, they cannot be incented by policymakers to reveal private information truthfully and thus must employ commercial lobbyists to intermediate on their behalves. These truth-telling incentives can determine both the observed composition in lobbying and the relationships between lobbyists and policymakers. We have shown that lobbyists' incentives for truth-telling are affected by various political factors, such as policymakers' characteristics, policy issues, and institutional features. Our results on the role of money in lobbying are less pessimistic in that money comple-

ments information. We have shown that side payments can lead to more lobbying and, therefore, more truth-telling by special interests and total lobbying and information transmission. Our results suggest that concerns about lobbyists' potential incentives to misrepresent information are mitigated if there is sufficient transparency about client-lobbyist relationships, such as those provided in the U.S. Lobbying Disclosure Act of 1995; lobbyists have to report activities, clients, and fees publicly.

We have considered a considerable number of extensions, but much more could be done. For example, we considered competition for access and agenda space rather than issue competition; hence, competing interests on the same issue – e.g., interest groups with opposite stances – and how this may affect the lobbying market division and lobbyists' strategies are left for the future. We implicitly assume that lobbyists know the salience of policy to a particular policymaker; that is, they have considerable expertise in monitoring the policymaking process and policymaker's preferences; however, this may or may not be a good abstraction. There may be a learning process whereby lobbyists learn about the salience of issues to particular policymakers. This may create information advantages for some lobbyists. However, our prior is that this would favor commercial lobbyists as they represent more clients and issues and interact with a broader spectrum of policymakers.

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A Appendix – Additional Extensions

A.1 Generalized Payoffs

In the baseline model, the special interest group cares only about its preferred policy being enacted. However, it is quite possible that it would prefer to receive no attention and hence no policy choice from the policymaker rather than the "left" policy p_l. So now let special interest groups receive the policy-dependent but state-independent payoff $\mathscr{R}_i(p)$ illustrated by Table 4 with $a > 0$ and $b > 0$. We may then follow the same procedure used in the baseline model to obtain the equilibrium.

		Policy		
		p_l	p_n	p_r
State	θ_l	$-a$	0	b
	θ_r	$-a$	0	b

Table 4: Interest Group's Generalized Payoff.

Equilibrium in the One-Shot Game Employing the generalized version of the special interest groups' payoffs, it is straight-forward to show that the special interest group would always be uninformative and that they would choose to employ a commercial lobbyist to intermediate on their behalf and signal the true state of the world if

$$F \leq \frac{b+a}{2}, \tag{A.1}$$

which immediately yields

Lemma A.1. *The special interest's willingness to pay for a commercial lobbyist is increasing in i) its potential gains, b, ii) its potential losses, a, and iii) payoff spread, $b + a$.*

Clearly, as the interest group's stake in political decisions increases, its willingness to pay for credible representation increases. The policymaker can learn the state of the world for all sufficiently salient policy issues either by revelation or inference, as in Proposition 3.1.

Equilibrium in the Infinitely-Repeated Game Now let us consider the infinitely-repeated lobbying game with generalized payoffs for the special interests. Again we assume that the policymaker employs the grim trigger, punishing any special interest or commercial lobbyist that does not send truthful messages with no future access. Hence, a special interest would have to

employ a commercial lobbyist in the future if caught, and a commercial lobbyist would earn zero future income.[43] We are able to show that

Proposition A.1. *With generalized payoffs a special interest group i will send truthful messages if i) $\theta_i = \theta_r$ or ii) the commercial lobbyist is truthful and $F \geq \frac{2(1-\delta)(b+a)}{\delta[1-G_i(\bar{s})]}$.*

This mirrors Proposition 3.3 except that an increase in the rewards from deviating from truth-telling in the current period, the greater the magnitude of $a+b$, causes the relative number of commercial lobbyists to special interests to increase.

The marginally truthful special interest, $\bar{\bar{i}}$, is then defined by

$$G_{\bar{\bar{i}}}(\bar{s}) = 1 - \frac{2(1-\delta)(b+a)}{\delta F}. \tag{A.2}$$

From (A.2), it follows that the count of the set of truthful special interests is (i) increasing in F, (ii) decreasing in $\bar{s}$, and (iii) decreasing in $b+a$.

A.2 Continuous State Space

It might seem that the findings of the preceding sections are too sharp and rely on the restriction of the model to a two-state world. Here we show that this is not restrictive and assume that the state of the world θ_i is randomly distributed on the interval $[\theta_l, \theta_r]$ with full support and marginal density $h_i(\theta)$. We similarly assume that the policy may take any value in the same interval so that $p_i \in [\theta_l, \theta_r]$ $\forall i$.

We thus have to modify the policymaker's and interest group's payoff functions accordingly:

i) $\mathscr{P}_i(p \mid s, \theta) = -|\theta_i - p_i| s_i$ for the policymaker from issue i;

ii) $\mathscr{R}_i(p \mid p_i^*) = -|p_i^* - p_i|$ for special interest group i.

These two payoff functions say that the policymaker has state-dependent preferences and wishes to match the policy to the state. In contrast, the lobby has single-peaked preferences with a most preferred policy, p_i^*, and again is state-independent. All other aspects of the model remain as before.

Following the same methodology as in the discrete state space version, we have

[43] The proof that playing the grim trigger is an equilibrium strategy for the policymaker is identical to one for the baseline model presented in Lemma 3.1 and is omitted for brevity.

Proposition A.2. *$\exists$ a critical $\bar{i}$ such that all $i \geq \bar{i}$ will send truthful messages and lobby the policymaker directly whenever $s_i \geq \bar{s}$ for some given $\bar{s}$. Whereas those special interests for which $i < \bar{i}$ will employ commercial lobbyists to lobby on their behalf whenever $s_i \geq \bar{s}$. All special interests for which $s_i < \bar{s}$ will not lobby.*

In essence, the discrete and continuous state space versions of the analysis have no substantive difference, and each produces the same empirical predictions.

B Appendix – Proofs

B.1 Proof of Proposition 3.1

Proof. The proof of this follows immediately from our discussions above. Alternatively, see the proof for Lemma A.1 with $b + a = 1$. □

B.2 Proof of Proposition 3.2

Proof. Suppose first that the special interest sends truthful messages. If the state is θ_l, the special interest's payoff with truth-telling today, $m_i = \theta_l$, is given by

$$0 + \frac{\delta[1 - G_i(\bar{s})]}{2} + \frac{\delta^2[1 - G_i(\bar{s})]}{2} + ... = \frac{\delta[1 - G_i(\bar{s})]}{2(1 - \delta)}. \tag{B.1}$$

If the state is θ_r, the special interest's payoff with truth-telling today, $m_i = \theta_r$, is given by

$$1 + \frac{\delta[1 - G_i(\bar{s})]}{2} + \frac{\delta^2[1 - G_i(\bar{s})]}{2} + ... = 1 + \frac{\delta[1 - G_i(\bar{s})]}{2(1 - \delta)}. \tag{B.2}$$

Finally, if the special interest is not truthful, $m_i = \theta_r$ when $\theta_i = \theta_l$, but the commercial lobbyist is, $m_c = \theta_i$, then the special interest's payoff, given that they lie today and then use the commercial lobbyist in all future periods, will be

$$1 + \frac{\delta[1 - G_i(\bar{s})][1 - F]}{2} + \frac{\delta^2[1 - G_i(\bar{s})][1 - F]}{2} + ... = 1 + \frac{\delta[1 - G_i(\bar{s})][1 - F]}{2(1 - \delta)}. \tag{B.3}$$

Hence, from (B.1)-(B.3) it follows immediately that the special interest will be truthful if $F \geq \frac{2(1-\delta)}{\delta[1-G_i(\bar{s})]}$. □

B.3 Proof of Proposition 3.3

Proof. The proof of this follows immediately from our discussions above. □

B.4 Proof of Lemma 3.1

Proof. It follows that the discounted stream of the policymaker's expected payoffs from issue i, if they do not enforce the trigger, is

$$\frac{\delta}{2(1-\delta)} \int_{2\bar{s}}^{S} s g_i(s) ds \text{ iff } 2\bar{s} \leq S; \text{ and}$$

$$0 \quad \text{otherwise.} \tag{B.4}$$

If they do enforce the trigger, the special interest must employ a commercial lobbyist who is always truthful, and the policymaker's expected payoff is then

$$\frac{\delta}{(1-\delta)} \int_{\bar{s}}^{S} s g_i(s) ds. \tag{B.5}$$

Trivially, we get

$$0 \leq \frac{\delta}{2(1-\delta)} \int_{2\bar{s}}^{S} s g_i(s) ds < \frac{\delta}{(1-\delta)} \int_{\bar{s}}^{S} s g_i(s) ds. \tag{B.6}$$

So the policymaker will indeed play the grim trigger. □

B.5 Proof of Proposition 4.1

Proof. Suppose the special interest group i pays the commercial lobbyist a signal-contingent fee F if $m_c = \theta^r$.[44] We consider both the one-shot game and the infinitely repeated game.

Equilibrium in One-Shot Game Suppose the policymaker receives no message, $m_i = m_c = 0$, then policymaker mixes between p_l and p_r with equal probability. The payoffs from issue i are then

$$\Pi_i = \frac{s_i}{2}, \Omega_i = \frac{1}{2}, \text{ and } \Psi_i = 0. \tag{B.7}$$

Now suppose the interest group sends a message directly. Due to its expected payoffs, it will send $m_i = \theta_r$ independent of θ_i, which the policymaker anticipated, and payoffs are identical to (B.7). Alternatively, a commercial lobbyist may send a message on interest group i's behalf. Due to the signal-contingent fee, the commercial lobbyist may send $m_c = \theta_r$, which is no longer believed by the policymaker. It then follows that the policymaker discards the message, mixes between policies p_l and p_r, and the special interest group would be better off being uninformative ($\Omega_i = \frac{1}{2}$) instead of hiring a commercial lobbyist $\Omega_i = \frac{1}{2}$.

However, a special interest group with $\theta_i = \theta_r$ would be better off paying the commercial lobbyist a fee F, which is not contingent on the signal if $F \leq 0$. A policymaker observing the signal-independent compensation would learn the truth and infer from all other presentations that $\theta_i = \theta_l$.

[44] The assumption of an outcome-contingent fee produces similar outcomes and is neglected.

In sum, special interests do not pay signal-contingent fees. Such fees would undermine messages' credibility and not allow them to separate and transmit credible messages via the commercial lobbyist.

Equilibrium in Infinitely-Repeated Game The commercial lobbyist has to decide whether to get captured by the SIG's success fee or to report truthfully and forfeit the success fee. Suppose the commercial lobbyist always sends $m_c = \theta_r$ to earn the success fee, independent of the true θ_i. The expected payoff is then

$$F + \frac{\delta}{2}F + \left(\frac{\delta}{2}\right)^2 F + ... = \frac{2F}{2-\delta}, \tag{B.8}$$

where each period the game may end with probability δ as the commercial lobbyist may get caught with probability $\frac{1}{2}$ for lying and would be banned.

Now, suppose the commercial lobbyist reports truthfully and sends $m_c = \theta_i$. Further, suppose $\theta_i = \theta_r$. The expected payoff is then

$$F + \delta\frac{F}{2} + \delta^2\frac{F}{2} + ... = \frac{2F - 2\delta}{2(1-\delta)}, \tag{B.9}$$

where the commercial lobbyist reports truthfully and only earns with probability $\frac{1}{2}$ a success fee. Similarly, if $m_c = \theta_i = \theta_l$, then the expected payoff is

$$\delta\frac{F}{2} + \delta^2\frac{F}{2} + ... = \frac{\delta F}{2(1-\delta)}. \tag{B.10}$$

Comparing (B.10) and (B.8), the CL is reporting truth-fully – and cannot be captured by the SIG – if

$$\frac{\delta F}{2(1-\delta)} \geq \frac{2F}{2-\delta}. \tag{B.11}$$

Solving above, we get that special interest can capture the commercial lobbyist with a signal-contingent fee if $\delta < \delta^* \equiv \frac{-6+\sqrt{20}}{-2} \approx 0.764$.

However, if the policymaker anticipates the commercial lobbyist's incentives, then any message m_c will be discarded when $\delta < \delta^*$; the interest group would have no incentive to hire a costly uninformative signal, meaning the commercial lobbyist would not be employed, and the special interest group could send a(n uninformative) message at a lower cost themselves. However, any interest groups with $\theta_i = \theta_r$ would offer signal-independent compensation and could separate the

outcomes. On the other hand, if $\delta \geq \delta^*$, the commercial lobbyist will refuse the offered contract, and the special interest group will have to offer a flat fee if it wishes to be represented.

In sum, if $\delta < \delta^*$, then the special interest groups prefer weakly a flat fee and a hired commercial lobbyist reports truth-fully; if $\delta \geq \delta^*$, then special interest groups cannot induce the commercial lobbyist to lie, contingent-fees are rejected, and special interest groups have to offer flat fees. □

B.6 Proof of Proposition 4.2

Proof. Given the structure above, we work out the truth-telling conditions. Consider special interest i and assume first that they are telling the truth. If the state is θ_l, the special interest's payoff from sending $m_i = \theta_l$ is given by

$$\begin{aligned} 0 + \delta \left[\tfrac{1-G_i(\bar{\pi})}{2} + \tfrac{1}{2} \textstyle\int_{\bar{\pi}-1}^{\bar{\pi}} (1 - \bar{\pi} + s_i) g_i(s) ds \right] + \delta^2 \left[\tfrac{1-G_i(\bar{\pi})}{2} + \tfrac{1}{2} \textstyle\int_{\bar{\pi}-1}^{\bar{\pi}} (1 - \bar{\pi} + s_i) g_i(s) ds \right] + ... \\ = \tfrac{\delta}{2(1-\delta)} \left[1 - G_i(\bar{\pi}) + \int_{\bar{\pi}-1}^{\bar{\pi}} (1 - \bar{\pi} + s_i) g_i(s) ds \right]. \end{aligned} \tag{B.12}$$

If the state is θ_r, the special interest's payoff from sending $m_i = \theta_r$ is given by

$$\begin{aligned} 1 + \delta \left[\tfrac{1-G_i(\bar{\pi})}{2} + \tfrac{1}{2} \textstyle\int_{\bar{\pi}-1}^{\bar{\pi}} (1 - \bar{\pi} + s_i) g_i(s) ds \right] + \delta^2 \left[\tfrac{1-G_i(\bar{\pi})}{2} + \tfrac{1}{2} \textstyle\int_{\bar{\pi}-1}^{\bar{\pi}} (1 - \bar{\pi} + s_i) g_i(s) ds \right] + ... \\ = 1 + \tfrac{\delta}{2(1-\delta)} \left[1 - G_i(\bar{\pi}) + \int_{\bar{\pi}-1}^{\bar{\pi}} (1 - \bar{\pi} + s_i) g_i(s) ds \right]. \end{aligned} \tag{B.13}$$

Finally, if the special interest is not truthful but the commercial lobbyist is, $m_i = \theta_r$ when $\theta_i = \theta_l$ and $m_c = \theta_i$, then the special interest's payoff will be

$$\begin{aligned} & 1 + \delta \left[\frac{(1 - G_i(\bar{\pi}))(1 - F)}{2} + \frac{1}{2} \int_{\bar{\pi}-1+F}^{\bar{\pi}} (1 - \bar{\pi} + s_i - F) g_i(s) ds \right] \\ & + \delta^2 \left[\frac{(1 - G_i(\bar{\pi}))(1 - F)}{2} + \frac{1}{2} \int_{\bar{\pi}-1+F}^{\bar{\pi}} (1 - \bar{\pi} + s_i - F) g_i(s) ds \right] + ... \\ & = 1 + \frac{\delta}{2(1-\delta)} \left[(1 - G_i(\bar{\pi}))(1 - F) + \int_{\bar{\pi}-1+F}^{\bar{\pi}} (1 - \bar{\pi} + s_i - F) g_i(s) ds \right]. \end{aligned} \tag{B.14}$$

Hence, from (B.12) and (B.14) we get the truth-telling condition and which reduces to

$$F \geq \frac{2(1-\delta)}{\delta(1 - G_i(\bar{\pi}))} - \frac{\int_{\bar{\pi}-1}^{\bar{\pi}-1+F} (1 - \bar{\pi} + s) g_i(s) ds}{(1 - G_i(\bar{\pi}))} - \frac{\int_{\bar{\pi}-1+F}^{\bar{\pi}} F g_i(s) ds}{(1 - G_i(\bar{\pi}))}. \tag{B.15}$$

□

B.7 Proof of Proposition 4.3

Proof. In the absence of side payments, the marginally truthful special interest is an $\bar{i}$ from (3.4) which satisfies

$$G_{\bar{i}}(\bar{s}) = 1 - \frac{2(1-\delta)}{\delta F}. \tag{B.16}$$

With side payments, the marginally truthful special interest is an $\hat{i}$ which satisfies

$$\int_{\bar{\pi}-1}^{\bar{\pi}-1+F} (1 - \bar{\pi} + s_i) g_i(s) ds + \int_{\bar{\pi}-1+F}^{\bar{\pi}} F g_i(s) ds - G_i(\bar{\pi}) F = \frac{2(1-\delta)}{\delta} - F. \tag{B.17}$$

So we can immediately write

$$G_{\hat{i}}(\bar{\pi}) > 1 - \frac{2(1-\delta)}{\delta F} = G_{\bar{i}}(\bar{s}). \tag{B.18}$$

Given that the densities are ordered by first-order stochastic dominance, it follows that $\bar{\pi} = \bar{s} \implies G_{\bar{i}}(\bar{s}) < G_{\hat{i}}(\bar{\pi}) \implies \bar{i} > \hat{i}$. This tells us that if side payments are permitted, then

i) There is more truth-telling by special interests in the sense that $I - \bar{i} < I - \hat{i}$;

ii) More lobbying by special interest groups;

iii) More lobbying in total.

□

B.8 Proof of Lemma 5.1

Proof. Consider a purely ideological policymaker with $a = c = 0$ and $b = d = 1$. The policymaker will always choose $p_i = p_r$ independent of θ_i and is therefore not responsive to any m_i or m_c, and there is no incentive for any lobbying.

Now consider a purely ideological policymaker with $a = c = 1$ and $b = d = 0$. Similarly, this policymaker will always choose $p_i = p_l$ independent of θ_i and is therefore not responsive to any m_i or m_c, and there is no incentive for lobbying. □

B.9 Proof of Proposition 5.1

Proof. We illustrate the proof with $0 = b < c < a = d = 1$.[45] Suppose the partially ideological policymaker receives no message, $m_i = m_c = 0$, and will then enact her preferred policy $p_i = p_l$ in the absence of information. The payoffs from issue i are then

$$\Pi_i = \frac{a+c}{2}, \Omega_i = 0, \text{ and } \Psi_i = 0. \tag{B.19}$$

Now suppose the interest group sends a message directly. Due to its expected payoffs, it will send $m_i = \theta_r$ independent of θ_i, which is anticipated by the policymaker and payoffs are identical to (B.34).

Alternatively, a commercial lobbyist may send a message on interest group i's behalf. The commercial lobbyist sends $m_c = \theta_i$, which is believed by the policymaker. It then follows that if $\theta_i = \theta_r$ and the special interest employs a commercial lobbyist, then the payoffs are

$$\Pi_i = d, \Omega_i = 1 - F, \text{ and } \Psi_i = F, \tag{B.20}$$

whereas if $\theta_i = \theta_l$ and the special interest employs a commercial lobbyist, then the payoffs are

$$\Pi_i = a, \Omega_i = -F, \text{ and } \Psi_i = F. \tag{B.21}$$

Hence, if $\theta_i = \theta_r$, then the interest group i will hire a commercial lobbyist to send $m_c = \theta_r$ to an initially oppositely biased policymaker whenever

$$F \leq 1. \tag{B.22}$$

However, if $\theta_i = \theta_l$, the lobby will abstain from direct and indirect lobbying. □

B.10 Proof of Proposition 5.2

Proof. Suppose first that the special interest sends truthful messages. If the state is θ_l, the special interest's payoff with truth-telling today, $m_i = \theta_l$, is given by

$$0 + \frac{\delta[1 - G_i(\bar{s})]}{2} + \frac{\delta^2[1 - G_i(\bar{s})]}{2} + ... = \frac{\delta[1 - G_i(\bar{s})]}{2(1-\delta)}. \tag{B.23}$$

[45] The implications for are identical for $0 = c < b < a = d = 1$.

If the state is θ_r, the special interest's payoff with truth-telling today, $m_i = \theta_r$, is given by

$$1 + \frac{\delta[1 - G_i(\bar{s})]}{2} + \frac{\delta^2[1 - G_i(\bar{s})]}{2} + ... = 1 + \frac{\delta[1 - G_i(\bar{s})]}{2(1 - \delta)}. \tag{B.24}$$

Finally, if the special interest is not truthful, $m_i = \theta_r$ when $\theta_i = \theta_l$, but the commercial lobbyist is, $m_c = \theta_i$, then the special interest will be detected lying with the probability that the state is observed ex-post, q_i, and will subsequently have to employ a commercial lobbyist. If, however, that state is not observed, then the special interest group is not detected lying and faces the same options in the next period as in the current one. Denoting $\mathscr{P}^u$as the expected steam of payoffs to a lobby that does not get detected lying, and $\mathscr{P}^d$ as the expected steam of payoffs to a lobby that gets detected lying, we may write

$$\mathscr{P}^u = 1 + \delta q_i \mathscr{P}^d + \delta(1 - q_i)\mathscr{P}^u \tag{B.25}$$

and so

$$\mathscr{P}^u = \frac{1 + \delta q_i \mathscr{P}^d}{1 - \delta(1 - q_i)}. \tag{B.26}$$

Now from (B.2) we get

$$\mathscr{P}^d = \frac{\delta[1 - G_i(\bar{s})][1 - F]}{2} + \frac{\delta^2[1 - G_i(\bar{s})][1 - F]}{2} + ... = \frac{\delta[1 - G_i(\bar{s})][1 - F]}{2(1 - \delta)}. \tag{B.27}$$

Combining (B.25)-(B.27) and rearranging, we get the condition that the lobby will be truthful if $F \geq \frac{2(1-\delta)}{\delta q_i[1-G_i(\bar{s})]} - \frac{(1-q_i)(1-\delta)}{q_i}$.

□

B.11 Proof of Corollary 5.1

Proof. Evaluated at $q_i = 1$ we have that $\frac{2(1-\delta)}{\delta[1-G_i(\bar{s})]} = \frac{2(1-\delta)}{\delta q_i[1-G_i(\bar{s})]} - \frac{(1-q_i)(1-\delta)}{q_i}$. Now differentiating the right-hand side it is easy to show that $\frac{d}{dq_i}\left[\frac{2(1-\delta)}{\delta q_i[1-G_i(\bar{s})]} - \frac{(1-q_i)(1-\delta)}{q_i}\right] < 0$ and the corollary immediately follows. □

B.12 Proof of Proposition 5.3

Proof. Suppose first that the special interest sends truthful messages. If the state is θ_l, the special interest's payoff with truth-telling today, $m_i = \theta_l$; If the state is θ_r, the special interest's payoff with truth-telling today, $m_i = \theta_r$. The truth-telling payoffs follow from (B.1) and (B.2), and we employ $\frac{\delta[1-G_i(\bar{s})]}{2(1-\delta)}$.

Now if the special interest is not truthful, $m_i = \theta_r$ when $\theta_i = \theta_l$, but the commercial lobbyist is, $m_c = \theta_i$, then the special interest's payoff, given that they lie today and potentially for the next $h-1$ periods if the state would be unfavorable, but then use the commercial lobbyist in all future periods afterward, will be

$$\begin{aligned} 1 + \delta[1 - G_i(\bar{s})] + ... + \delta^{h-1}[1 - G_i(\bar{s})] + \frac{\delta^h[1 - G_i(\bar{s})][1 - F]}{2} + \frac{\delta^{h+1}[1 - G_i(\bar{s})][1 - F]}{2} + ... \\ = 1 + \sum_{t=1}^{h-1} \delta^t[1 - G_i(\bar{s})] + \sum_{t=h}^{\infty} \frac{\delta^t[1 - G_i(\bar{s})][1 - F]}{2} \\ = 1 + \frac{(\delta - \delta^h)[1 - G_i(\bar{s})]}{1 - \delta} + \frac{\delta^h[1 - G_i(\bar{s})][1 - F]}{2(1 - \delta)} \end{aligned} \tag{B.28}$$

Hence, from (B.1)-(B.28), it follows immediately that the special interest will be truthful if $F \geq \frac{2(1-\delta)}{\delta^h[1-G_i(\bar{s}]} + \frac{\delta-\delta^h}{\delta^h}$. □

B.13 Proof Proposition 5.4

Proof. When the policymaker type changes after τ periods, the problem is no longer stationary, and we have to be careful that the solutions we offer are time-consistent. However, from the perspective of the period of policymaker change, because the problem is stationary thereafter, and employing the Proof of Proposition 3.2, we have that a special interest group lobbying a policymaker of type $k \in \{l, r\}$ will be truthful on issue i if

$$\frac{2(1 - \delta)}{\delta[1 - G_i^k(\bar{s})]} < F, \tag{B.29}$$

and untruthful if the inequality is reversed. Now since $G_i^l(s)$ first-order stochastically dominates $G_i^r(s)$ we have three possibilities

1. If $\frac{2(1-\delta)}{\delta[1-G_i^r(\bar{s})]} > F$, then the special interest will be untruthful with both r and l types.
2. If $\frac{2(1-\delta)}{\delta[1-G_i^l(\bar{s})]} < F$, then the special interest will be truthful with both r and l types.

3. If $\frac{2(1-\delta)}{\delta[1-G_i^l(\bar{s})]} > F > \frac{2(1-\delta)}{\delta[1-G_i^r(\bar{s})]}$, then the special interest will untruthful with l types and truthful with r types.

These three cases, together with the type of the incumbent policymaker, allow us to categorize the possibilities. Notice that since there is a change in policymaker after τ periods and the solution thereafter is given by the appropriate version of (B.29) we can then treat period $\tau - 1$ as the last period in a finitely repeated game and solve for all earlier periods using backward induction. We may immediately state that in periods 1 to $\tau - 1$ special interest group i will truth tell to a policymaker of type $k \in \{l, r\}$ if the following holds

$$1 + \frac{\delta[1 - G_i^k(\bar{s})][1 - F]}{2} + ... + \frac{\delta^{\tau-1}[1 - G_i^k(\bar{s})][1 - F]}{2} \leq \frac{\delta[1 - G_i^k(\bar{s})]}{2} + ... + \frac{\delta^{\tau-1}[1 - G_i^k(\bar{s})]}{2}, \tag{B.30}$$

which follows if

$$F \geq \frac{2}{\delta[1 - G_i^k(\bar{s})]}. \tag{B.31}$$

Now expressions (B.29) and (B.31) together with the assumption that $G_i^l(s)$ first-order stochastically dominates $G_i^r(s)$ we can conclude the proof. □

B.14 Proof Proposition 5.5

Now we allow the policymaker type to change with probability $\rho_k, k \in \{l, r\}$, after τ periods. With this modification, the truth-telling condition for a lobby concerned with issue i may be written

$$\begin{aligned}
&1 + \frac{\delta[1 - G_i^k(\bar{s})][1 - F]}{2} + ... + \frac{\delta^{\tau-1}[1 - G_i^k(\bar{s})][1 - F]}{2} \\
&+ (1 - \rho_k)\left[\frac{\delta^{\tau}[1 - G_i^k(\bar{s})][1 - F]}{2} + ...+\right] + \rho_k \mathscr{C}^{-k} \\
&\leq \frac{\delta[1 - G_i^k(\bar{s})]}{2} + ... + \frac{\delta^{\tau-1}[1 - G_i^k(\bar{s})]}{2} \\
&+ (1 - \rho_k)\left[\frac{\delta^{\tau}[1 - G_i^k(\bar{s})]}{2} + ...+\right] + \rho_k \mathscr{C}^{-k},
\end{aligned} \tag{B.32}$$

where $\mathscr{C}^{-k}$ is the continuation value if the policymaker type changes. The truth telling-condition thus reduces to

$$1 \leq F\left[\frac{1 - G_i^k(\bar{s})}{2}\right]\left[\sum_{j=1}^{\tau-1}\delta^j + \frac{\delta^{\tau}(1 - \rho_k)}{1 - \delta}\right]. \tag{B.33}$$

Clearly, this condition is less likely to be satisfied the higher the value of ρ_k.

B.15 Proof of Lemma A.1

Proof. Suppose the policymaker receives no message, $m_i = m_c = 0$, then the policymaker mixes between p_l and p_r with equal probability. The payoffs from issue i are then

$$\Pi_i = \frac{s_i}{2}, \Omega_i = \frac{b-a}{2}, \text{ and } \Psi_i = 0. \tag{B.34}$$

Now suppose the interest group sends a message directly. Due to its expected payoffs, it will send $m_i = \theta_r$ independent of θ_i, which the policymaker anticipated, and payoffs are identical to (B.34).

Alternatively, a commercial lobbyist may send a message on interest group i's behalf. The commercial lobbyist sends $m_c = \theta_i$, which is believed by the policymaker. It then follows that if $\theta_i = \theta_r$ and the special interest employs a commercial lobbyist, then the payoffs are

$$\Pi_i = s_i, \Omega_i = b - F, \text{ and } \Psi_i = F, \tag{B.35}$$

whereas if $\theta_i = \theta_l$ and the special interest employs a commercial lobbyist, then the payoffs are

$$\Pi_i = s_i, \Omega_i = -a - F, \text{ and } \Psi_i = F. \tag{B.36}$$

Hence, if $\theta_i = \theta_r$, then the interest group i will hire a commercial lobbyist to send $m_c = \theta_r$ if

$$F \leq \frac{b+a}{2}. \tag{B.37}$$

However, if $\theta_i = \theta_l$, then the interest group i will not hire a commercial lobbyist and just send $m_i = \theta_r$. The policymaker will receive no revealing information when $F > \frac{b+a}{2}$ but can learn or infer the state of the world for issue i when $F \leq \frac{b+a}{2}$.

Considering (B.37), we can see that the right-hand side is increasing in i) a, ii) b, and therefore iii) $b+a$, which increases the incentives for the interest group to hire a commercial lobbyist when $\theta_i = \theta_r$. □

B.16 Proof of Proposition A.1

Proof. Here we consider the special interest group's choices. If the state is θ_l and the special interest sends $m_i = \theta_l$, the special interest's expected payoff is given by

$$-a + \delta[1 - G_i(\bar{s})]\left(\frac{b-a}{2}\right) + \delta^2[1 - G_i(\bar{s})]\left(\frac{b-a}{2}\right) + ... = -a + \frac{\delta[1 - G_i(\bar{s})]}{1-\delta}\left(\frac{b-a}{2}\right). \quad \text{(B.38)}$$

If the state is θ_r and the special interest sends $m_i = \theta_r$, the special interest's expected payoff is given by

$$b + \delta[1 - G_i(\bar{s})]\left(\frac{b-a}{2}\right) + \delta^2[1 - G_i(\bar{s})]\left(\frac{b-a}{2}\right) + ... = 1 + \frac{\delta[1 - G_i(\bar{s})]}{1-\delta}\left(\frac{b-a}{2}\right). \quad \text{(B.39)}$$

Finally, if the special interest is not telling the truth, $mi_i = \theta_r$ when $\theta_i = \theta_l$, and has to employ commercial lobbyist in the future, which would tell the truth with $m_c = \theta_i$, then the expected payoff would be

$$b + \delta[1 - G_i(\bar{s})]\left(\frac{b-F}{2} - \frac{a}{2}\right) + \delta^2[1 - G_i(\bar{s})]\left(\frac{b-F}{2} - \frac{a}{2}\right) + ... = 1 + \frac{\delta[1 - G_i(\bar{s})]}{1-\delta}\left(\frac{b-F-a}{2}\right). \quad \text{(B.40)}$$

Hence, from (B.38)-(B.40) it follows that the special interest will be truthful if $\theta_i = \theta_r$ or $F \geq \frac{2(1-\delta)(b+a)}{\delta[1-G_i(\bar{s})]}$. □

B.17 Proof of Proposition A.2

Proof. To simplify the exposition, we temporarily write the lobbies' continuation values as $\mathscr{R}_i^T$ if they are truthful, and $\mathscr{R}_i^U$ if they are untruthful.

If the state θ_i is realized today, then the truth-telling condition requires

$$\mathscr{R}_i(\theta_i \mid p_i^*) + \delta\mathscr{R}_i^T \geq \mathscr{R}_i(p_i^* \mid p_i^*) + \delta\mathscr{R}_i^U, \quad \text{(B.41)}$$

which may be rewritten

$$|p_i^* - \theta_i| \leq \delta\left(\mathscr{R}_i^T - \mathscr{R}_i^U\right). \quad \text{(B.42)}$$

If (B.42) holds, then in the state θ_i the lobby may send the truthful message $m_i(\theta) = \theta_i$. Consider

now the marginally truthful states, $\{\bar{\theta}_i,\ \underline{\theta}_i\}$, defined by

$$\theta_i = p_i^* \pm \delta \left(\mathscr{R}_i^T - \mathscr{R}_i^U \right). \tag{B.43}$$

We note first that if $\theta_i \geq \underline{\theta}_i$ and $\theta_i \leq \bar{\theta}_i$, then the special interest sends truthful messages for all state realizations. If either $\theta_i < \underline{\theta}_i$ or $\theta_i > \bar{\theta}_i$, then the special interest will send untruthful messages for some states.

Next, we note that if the special interest sends an untruthful message, the policymaker will choose to play the grim trigger strategy exactly as demonstrated in expressions (B.4)-(B.6).

Finally, we note that when we consider an interest group with higher expected salience, an increase in i. This interest group has greater expected benefit from truth-telling, and as a consequence, there will spread in the interval $[\underline{\theta}_i, \bar{\theta}_i]$ if $\mathscr{R}_i^T - \mathscr{R}_i^U$ is increasing in i which follows from the Proof of Proposition 3.2. □