

Narratives and expert information in agenda-setting: Experimental evidence on state legislator engagement with artificial intelligence policy

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Abstract

Are narratives as influential in gaining the attention of policy-makers as expert information, including for complex, technical policy domains such as artificial intelligence (AI) policy? This pre-registered study uses a field experiment to evaluate legislator responsiveness to policy entrepreneur outreach. In partnership with a leading AI think tank, we send more than 7300 U.S. state legislative offices emails about AI policy containing an influence strategy (providing a narrative, expert information, or the organization's background), along with a prominent issue frame about AI (emphasizing technological competition or ethical implications). To assess engagement, we measure link clicks to further resources and webinar registration and attendance. Although AI policy is a highly technical domain, we find that narratives are just as effective as expert information in engaging legislators. Compared to control, expert information and narratives led to 28 and 34 percent increases in policymaker engagement, respectively. Furthermore, higher legislature professionalism and lower state-level prior AI experience are associated with greater engagement with both narratives and expert information. Finally, we find that policy-makers are equally engaged by an ethical framing of AI policy as they are with an economic one. The findings advance efforts to bridge scholarship on policy narratives, policy entrepreneurship, and agenda-setting.

KEYWORDS

agenda-setting, artificial intelligence, field experiment, narratives, policy entrepreneurship, state legislators

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INTRODUCTION

The politics of influence play a central role in theories of agenda-setting. According to the most prominent framework of agenda-setting (Jones et al., 2016), the Multiple Streams Framework (MSF), policy problems and solutions to those problems are brought together by skilled policy entrepreneurs through strategic problem definition, networking, and provision of information to policymakers (Kingdon, 1984). However, scholars have emphasized the need to unpack the inner workings or ‘black box’ of such processes (Anderson et al., 2020). For example, Petridou and Mintrom (2021) call for research to more carefully measure the impact of and the specific strategies employed by policy entrepreneurs.

In response, scholars have widened their attention to other theories of the policy process, including the relatively recent Narrative Policy Framework (NPF) (Jones & McBeth, 2010; Jones et al., 2016; McBeth et al., 2007). The NPF highlights policy persuasion through stories involving characters, contexts, plots, and morals (Jones & McBeth, 2010). It has been increasingly embraced as a promising explanatory framework bringing post-positivist elements into policy change theory (McBeth et al., 2014; Weible & Schlager, 2016). For example, Birkland and Warnement (2016) suggest the utility of the NPF in explaining focusing events, McBeth and Lybecker (2018) argue that narratives can better explain the role of policy entrepreneurs in problem definition and coupling problems and solutions, and Petridou and Mintrom (2021) argue that policy entrepreneurs can serve as ‘policy marketers’ who promote narratives to streamline complex policy issues.

We embrace this direction by incorporating a focus on narratives into a study of agenda-setting and policy entrepreneur influence. In particular, we consider whether policy entrepreneurs can effectively use narratives to influence policymakers, even in highly technical, complex policy domains where the provision of technical information is traditionally considered essential. The context for this work is the emerging and understudied technical policy domain surrounding artificial intelligence (AI). AI policy is a valuable testbed for policy process and agenda-setting research due to its sweeping social, ethical, and economic implications across policy sectors, and because a diverse array of actors in the public, private, and NGO sectors are now acting as policy entrepreneurs and drawing on a variety of strategies to set the terms of debate (Cave et al., 2018; Minkkinen et al., 2022).

The study of AI policy in the near future provides the opportunity to closely examine agenda-setting in action for a novel, complex, and important policy domain for which the agenda has not yet been established (Schiff, 2023). Impacts of AI, a strategic general purpose technology (Leung, 2020), pertain to sectors ranging from transportation and education to government services and media. Estimated trillions of dollars of economic impact (McKinsey Global Institute, 2018) and potential widespread labor disruption (Manyika et al., 2017) have led more than two dozen countries to develop national AI policy strategies and to engage in multilateral partnerships through the UN, OECD, Global Partnership on AI and other fora (Cihon et al., 2020). Furthermore, widespread public attention and rapid commercial and regulatory responses to powerful large language models like ChatGPT beginning in late 2022 have led to a sea change in the collective understanding of AI's impacts and risks. This urgent activity in governments as well as accompanying public, scholarly, and media attention (Ouchchy et al., 2020; Zhang et al., 2022) indicate that a policy window is indeed open. However, research on AI policy is still nascent, especially in empirical and quantitative policy process theory research (Justo-Hanani, 2022; Perry & Uuk, 2019). Advancing research on AI policy is thus both theoretically and substantively valuable for scholars and the public at large.

This study examines agenda-setting influence in AI policy by observing the behavior of United States (U.S.) state legislators in response to differing policy entrepreneur outreach strategies. In partnership with a leading AI policy think tank, we conduct a pre-registered information-provision field experiment.¹ We randomly assign more than 7300 state legislators to different email communications about AI policy containing (1) expert technical information, (2) a persuasive narrative, or (3) information about the organization's background (the control message). The emails also emphasize a prominent issue frame about AI, either related to technological competition or social and ethical implications. To measure policymaker engagement with these messages as an indication of policy

entrepreneur influence, we measure link clicks to further resources and registration and attendance at a webinar on AI policy developed as part of the study. These outcome measures capture natural responses to common policy entrepreneur outreach and provide valuable insight into a critical step in the agenda-setting process. While prior work on the effectiveness of narratives in a policy context has employed survey experiments of members of the public (Guenther & Shanahan, 2020; Jones, 2014b; McMorris et al., 2018; Zanoocco et al., 2018), a key contribution of this study is that it uniquely uses a field experiment to assess the influence of narratives on policymakers themselves. By measuring legislator engagement with AI policy in the course of their daily work, and by using novel outcome measures of engagement, we contribute causal evidence on the role of narratives and expert information, and do so in an authentic setting.

We find that both narratives and technical information are statistically more engaging than more generic policy entrepreneur outreach. Facts and stories both increase legislator engagement with AI policy by about 30 percent. Despite AI's noted technical complexity, narratives are just as effective as expert information in engaging policymakers. This result holds whether state legislative offices receive a frame emphasizing social and ethical issues or the economic and geopolitical dimensions of AI. Moreover, despite significant attention to AI's role for innovation and competition, we find that, overall, policymakers are at least as drawn to the ethics frame. Finally, we find that legislators in states with little prior experience in AI policymaking are especially interested in engaging not only with expert information, but also with narratives. The results suggest that 'passion' can be just as important as 'reason' in policy influence efforts, even for highly technical domains like AI policy.

THEORY

The role of narratives in agenda-setting

Following the post-positivist turn in policy process theory (Fischer, 1998), scholars have devoted increased attention to interpretive elements such as policy images, beliefs, social constructions, and recently, narratives (Jones & McBeth, 2010; McBeth et al., 2014). Narratives arguably play a role in shaping policy images and social constructions, as well as beliefs, by helping to establish a relevant policy 'story' with a setting, heroes, villains, and a moral. Successful narratives can influence agenda-setting by shaping perceptions of target populations, expanding or containing issues, and reducing uncertainty or perceived risk (Jones & McBeth, 2010; McBeth et al., 2007).

While narratives are often discussed in the context of shaping public opinion, the meso-level of analysis in the NPF recognizes that "groups use policy narratives to try and influence public policy" and policymakers more specifically (McBeth & Lybecker, 2018, p. 170). Narratives may be influential for policymakers for a variety of reasons: Not only can they provide a valuable tool for a policymaker's own messaging efforts, they may also directly persuade a policymaker of the legitimacy and feasibility of a proposed policy (Anderson et al., 2020). With respect to the former, especially at the outset of a new policy question or domain, policymakers may be in need of messages, images, and narratives used to craft their own political identity, persuasive messaging, and public and constituent communications. In terms of their direct persuasive impacts, a body of research (Brysk, 1994; Small & Loewenstein, 2003) shows that 'personal' narratives, particularly those discussing the plight of individuals, may be "very effective at eliciting an emotional reaction, personalizing the issue, making it more salient, and making people feel a greater need to act" (Mcentire et al., 2015, p. 14).

In the context of agenda-setting, it is policy entrepreneurs—in part functioning as policy marketers or policy narrators—who play a key role as the crafters and promoters of narratives through the act of problem definition, or elevating public conditions to the status of policy problems through careful and strategic shaping of indicators and focusing events (Lybecker et al., 2022; Mcbeth & Shanahan, 2004; Mintrom & Norman, 2009). Given the central role that problem (and indeed solution) definition plays in the activities of policy entrepreneurs and in frameworks like the MSF, narratives arguably help to make

sense of influence dynamics in agenda-setting. As McBeth and Lybecker (2018) argue, public policy may in fact be increasingly driven by narratives.

Policy entrepreneurship and expertise in technical policy domains

In addition to functioning as policy marketers or narrators, policy entrepreneurs can also exert influence through building coalitions and, importantly, by providing expertise (Aviram et al., 2020; Capano & Galanti, 2018; Mintrom & Norman, 2009). Indeed, in recent and closely related research, Anderson et al. (2020) demonstrate empirically that state legislators are especially reliant on the provision of information and evidence, exceeding even the importance of traditional policy entrepreneurship activities like coalition-building. In this capacity, policy entrepreneurs may provide critical information about policy problems and solutions that are poorly understood, serving as ‘information entrepreneurs’ or ‘expert entrepreneurs’ (Crow, 2010) or ‘knowledge brokers’ (Knaggård, 2014) by demonstrating the severity of problems or the feasibility of solutions. This expertise provision may reduce the perceived risks of policymaking under uncertainty (Dewulf & Biesbroek, 2018; Knaggård, 2014), and can be used to justify decisions when policymakers desire scientific or technical credibility.

In particular, the provision of expertise should be especially important in policy areas that are technically complex or ‘hard’ issues (Carmines & Stimson, 1980; Gormley, 1986), such as environmental policy (Knaggård, 2014) and AI. Given the difficulty of understanding the underlying issues (Zito, 2001), policymakers are in need of ‘hard’ evidence to inform decisionmaking. Furthermore, in the case of these highly complex and technical issues, policymaking is typically dominated by powerful elites, expert bureaucrats and professionals, and associated business interests. When issues are also of low salience, this leads to ‘boardroom’ politics, where the public has little access (Gormley, 1986). In these cases, public attention is less critical for politicians (Eshbaugh-Soha, 2006), reducing the need for narratives to be used in stump speeches and credit-claiming.

Emerging technologies are especially clear examples of highly technical and complex domains, and AI is a paradigmatic example. Notably, a major national and international policy concern is developing government competence to understand and address AI issues and priorities. For example, policy developments like U.S. Executive Orders 13,859 and 13,960 have led to the launch of a government-wide AI community of practice (AI CoP) and a National Artificial Intelligence Advisory Committee, while prominent agenda-setting bodies like the National Security Commission on Artificial Intelligence (NSCAI) heavily emphasize educating, recruiting, and training “AI Talent.” Indeed the NSCAI drafted its 756-page report in 2021 with a substantial focus on cultivating experts and providing expert information on AI to the President and Congress, and the AI CoP regularly convenes events and working groups with the mission to “collectively build a knowledge base and inter-agency forum on best practices, tools, and resources” (U.S. General Services Administration, 2023). Expertise has thus been promoted through rhetoric, institutional changes, funding increases, legislation, new industry and government standards projects, and various education-related initiatives; even indices tracking AI expertise are proliferating (Shearer et al., 2020; Von Ingersleben-Seip, 2023; Wyman, 2020). These concerns are persistent across state, national, and international AI policy discourse (Schiff, 2022), demonstrating the clear perceived importance of enhancing government expertise with respect to this emerging policy domain.

Competing influence dynamics in agenda-setting

Therefore, there are competing expectations regarding which policy entrepreneurship strategies are most influential to policymakers in the case of complex, emerging technologies. On one hand, carefully crafted narratives may be more effective than facts (McBeth et al., 2022), especially if policy

entrepreneurs have successfully framed AI in terms of implications that might capture the public's attention, such as impacts on ethics, racial injustice, inequality, or job displacement.²

Yet, science and technology policy typically rests at the bottom of public issue priorities (Jones et al., 2009). Given the established importance of expert information for related domains like the environment (Knaggård, 2014; Michaels, 2009), there are reasons to expect that a potentially even more complex domain like AI will be just as reliant on expert information from policy entrepreneurs, if not more so. For a highly complex technological domain like AI, characterized by great uncertainty and little public (or policymaker) understanding, we might expect the provision of expertise to be far more valuable and influential to policymakers. Yet, Zahariadis (2014) cautions that while the provision of information alone may reduce uncertainty, it will not dissolve the ambiguities that must be resolved for agenda-setting to take place.

Given the ostensible strengths of both strategies used by policy entrepreneurs,³ we expect that the provision of expertise and narratives will engage legislators more than generic policy entrepreneur outreach (e.g., introducing the organization's name and mission):

Policy Entrepreneur Effectiveness Hypothesis: The provision of narratives or expertise by policy entrepreneurs will increase policymaker attention to and engagement with the policy issue at hand.

However, for the reasons described above, it is less clear whether one strategy might be more effective than the other. Furthermore, it is worth noting that while this question has not been addressed empirically in the context of AI policy, there is an cross-disciplinary body of work of contrasting the influence of facts versus stories. For example Tamul et al. (2021) find narratives more persuasive than fact sheets in eliciting safe driving behavior, Janssen et al. (2013) show that narratives can enhance precautionary perspectives on cancer risk, and Maier et al. (2017) demonstrate the effectiveness of narratives in inducing empathy around genocide and mass violence, while Jones (2014a) find narratives and facts equally persuasive. More fundamentally, disciplines such as communications, psychology, and philosophy have long contrasted 'reason' against 'passion,' a debate that goes back at least to Hume and Kant (Solomon, 1977). This paper's experimental design picks up on this history, applying it in the context of policy process and NPF scholarship, to assess whether the persuasive power of narratives extends to AI.

Therefore, we investigate competing expectations:

Dominance of Narratives Hypothesis: The provision of narratives will induce greater policymaker engagement than the provision of expertise.⁴

Dominance of Expertise Hypothesis: The provision of expertise will induce greater policymaker engagement than the provision of narratives.

It is also possible that neither strategy is effective or that the strategies are equally effective. Even if equally effective, the strategies may operate through distinct mechanisms and impact different subgroups of legislators differently. Of particular relevance, AI's status as a complex, technical policy area has raised significant concern about the lack of government and policymaking expertise (White House, 2019). Relatedly, research reveals large gaps in the public's understanding of the definition, applications, and impacts of AI (DeCario & Etzioni, 2021). While legislators in states that have previously worked on AI legislation may have developed a better foundational understanding of AI and its policy implications, legislators in states with limited legislative capacity and prior engagement with AI likely have little more exposure to AI than the general public. Nonetheless, these legislators will soon be expected to formulate policy in this complex domain, and as such, may perceive a stronger need for expert information on AI as they formulate their initial policy preferences and intentions around this increasingly urgent policy issue:

Prior Experience Hypothesis: Compared to legislators in states with greater prior experience in AI policymaking, legislators in states with less experience with AI will respond with greater engagement to the expertise treatment.

Issue frames

Scholars of political communication and media have also examined how policy issues may be framed in different ways to emphasize alternative sub-issues or dimensions involved (Chong & Druckman, 2007; Iyengar, 1990). For example, Neuman et al. (1992) identify human impact, economics, and conflict as three common issue frames used in the news media. These contrasting issue frames not only have the ability to influence public opinion, but they may also influence policy entrepreneurs and policymakers (McBeth et al., 2014). Policy entrepreneurs can thus strategically take advantage of different available issue (or policy) frames (Mcbeth & Shanahan, 2004; Mintrom & Luetjens, 2017) to expand or contain issues into favorable policy venues and to help construct a preferred policy image (Baumgartner & Jones, 1991).⁵

Indeed, there is ample evidence that key stakeholders in AI are already developing issue frames. In terms of frames emphasizing human impact, a large number of organizations have produced ethical codes, frameworks, and principles (Schiff et al., 2021) that have filtered into national and international policy strategies and agreements, such as the OECD's (2019) Principles on Artificial Intelligence. Alternatively, policymakers have also paid substantial attention to the economic and technological competitiveness dimensions of AI, often contrasting the success of U.S. AI policy and development against that of China (Castro & McLaughlin, 2021; Ulnicane, 2022). In this case, the economic and conflict frames often appear to be merged in practice, as evident in major AI-related legislation such as the U.S. Innovation and Competition Act of 2021.

We thus consider these commonly used issue frames surrounding ethical implications of AI or, alternatively, the economic and technological competitiveness implications of AI. How policymakers respond to these distinct frames is important as frames can alter the key categories, problems, and solutions that policymakers associate with AI policy. To date, federal AI policymaking has arguably primarily centered the economic-technological competition frame, with prominent efforts like the National Security Commission on AI, the U.S. Innovation and Competition Act, and the CHIPS and Science Act of 2022. We expect these efforts to influence state policymakers' considerations and agendas as well. Furthermore, given constituent attention to economic and security issues, especially in the context of technology policy (Jones et al., 2009), we expect greater policymaker engagement with a competition framing than an ethical framing of AI:

Issue Framing Hypothesis: Policymakers will exhibit greater average levels of engagement in response to issue frames emphasizing economic and technological competition around AI, as compared to issue frames emphasizing AI's ethical and social impacts.

There are additional benefits of using issue frames as a dimension of our experimental design. First, as there is arguably no way (and certainly no authentic way) for policy entrepreneurs to present a 'neutral' frame of AI policy (Elder & Cobb, 1984), it is important to identify prominent and realistic frames to build knowledge about issue framing as well as support external validity in the AI policy domain. Second, the use of multiple frames helps ensure that findings about policy entrepreneur influence strategies aren't limited to a single application of AI or way of making sense of AI as a policy issue. Finally, the use of contrasting frames also allows us to examine the interactions between framing and policy entrepreneur influence efforts (Petridou & Mintrom, 2021), that is whether certain influence strategies are more or less effective when used in tandem with particular issue frames. As a starting point, we hypothesize that the use of elements like characters and morals in narratives may be especially conducive to communicating ethics frames, which often highlight human impacts:

Strategies by Issue Framing Hypothesis: Policymakers will respond with greater engagement to narratives when they are provided issue frames emphasizing the ethical and social dimensions of AI as compared to issue frames emphasizing the economic and technological competitiveness dimensions of AI.

EXPERIMENTAL DESIGN

We use a pre-registered email-based field experiment to evaluate our hypotheses.⁶ We conduct the experiment in partnership with a leading AI think tank, The Future Society (TFS),⁷ which is especially beneficial as we seek to measure authentic engagement with policy entrepreneur strategies in the context of policymakers' everyday job activities. The Future Society is a nonprofit "think-and-do" tank focused on AI policy that consults with and provides resources for policymakers, amongst other activities.⁸ Coordination with this organization not only aids in the creation of authentic treatments, but also enhances the utility of the study for policymakers and their staffs by providing access to a leading organization with which they can connect further in the future. Email communication in the study came from one of the organization's email accounts and used the organization's branding. Additionally, as part of the study, the organization hosted resources on their website and co-developed and hosted a webinar on AI policy targeted at informing state policymakers. The email messages, treatment strategy, fact sheets and stories, webinar content, and other materials were collaboratively developed and reviewed by several members of the organization, in part in line with their own research and organizational objectives.

Study sample

The study sample includes 7355 U.S. state legislators, or approximately all legislators with email addresses that were available through official state legislative websites as of May 2021.⁹ Note that by sending email communications to state legislators' email addresses, we are effectively treating the legislators' offices, as it is likely that staffers, rather than the legislators themselves, received the treatment emails. We consider this to be a *feature* of the normal environment in which policy entrepreneurs attempt to influence legislators and consider engagement by members of a legislative office to be indicative of the policymaker's activities and priorities. We follow related research (Anderson et al., 2020; Butler & Broockman, 2011; Butler et al., 2012) in discussing treatment effects on legislators, and we interchangeably refer to legislators and legislative offices. Moreover, we focus on state legislators for a couple of reasons. First, state legislatures offer more variation in regards to prior experience in AI policymaking and legislative capacity (Squire, 1992). Additionally, the large sample of state legislators contributes more power to evaluate our hypotheses. Table A1 in Supporting information Section A1 presents key descriptive statistics about the sample.

Randomization and treatment assignment

We randomly assign state legislators within blocks to email treatments, following the procedure of Butler and Broockman (2011). Specifically, we block randomize by state, legislative chamber, and political party (198 blocks total, as Nebraska has a unicameral legislature).¹⁰ Policymakers within blocks are then randomly assigned to one of six treatment or control groups. They receive an email communication that draws on either the (1) expertise strategy or (2) narrative strategy or (3) a more generic control message employing neither strategy. The messages also incorporate one of two issue frames, emphasizing either the (a) social and ethical or (b) economic and technological leadership dimensions of AI. This produces an overall 3×2 factorial design with six total treatment/control groups.

The wording of the email treatments is designed to emulate the issue frames and language used in real news media stories and policy entrepreneur communications with policymakers. In particular, the emails discuss either ethical and social harms associated with facial recognition, or economic and technological leadership implications of U.S. competition with China, prominent topics discussed for the respective issue frames. Moreover, when constructing the narrative strategy treatments, we adopt a personal narrative approach (Mcentire et al., 2015) and include the core elements of narrative structure according to the NPF: a setting, characters (a victim and a villain), a plot, and a policy moral (McBeth et al., 2014).

Of particular importance, in order to evaluate the effectiveness of these treatments, our experimental design necessitates measuring email engagement for the control groups as well. While it is not possible to create a control message that completely avoids priming while also appearing authentic,¹¹ we designed our control message to be as neutral as possible and to represent a baseline of typical policy entrepreneur outreach. In particular, the control group received a generic message which solely emphasized the partner organization's name and core activities, but was otherwise structurally symmetric to the treatment messages.¹² We crafted the language for the control emails based on language that the partner organization uses when presenting itself, similar to messaging employed by other lobbying and advocacy organizations, and similar to the design strategy employed by other researchers engaging in field experiment research on state legislator lobbying (Wiener, 2020). All emails are also designed to emulate the aesthetics and style of newsletters sent out by the partner organization, and all were vetted by several members of the staff. Figure 1 presents a draft example with additional formatting elements. For more information about the construction and sources of inspiration for the treatment and control messages, including the full text for each and email template, see Supporting information Section A6.

The email messages contain links to extended versions of information presented in the form of fact sheets (for the expertise conditions), stories (for the narrative conditions),¹³ or the organization's background (for the control conditions). The fact sheets and stories were crafted in collaboration with the partner based on the materials mentioned and additional research and reporting on these topics, and were vetted by several members of the partner organization. The email messages additionally contain an encouragement to reply to the email and a link to RSVP for a webinar on AI for state legislators, planned and conducted in conjunction with the partner organization in December 2021 to benefit study participants.

Outcome measures

We evaluate policymaker engagement with the emails by measuring willingness to partake in a series of actions that demand increasing levels of effort, time, and attention: clicking on links to additional information discussed in the email (a fact sheet, story, or the organization's website), clicking on a link to sign up for a webinar, replying to the email, and attending the webinar,¹⁴ all behaviors that are reflective of real-world policymaker-policy entrepreneur influence dynamics. As the primary outcome measure, we construct a binary variable which indicates whether legislative offices participated in at least one of these activities.¹⁵

While these actions taken by policymakers are relatively low effort and short term, we argue that they constitute meaningful initial indications of interest and engagement, important in the process of policy entrepreneur influence that leads towards eventual policy change. Policymaker time and attention is scarce, so policy entrepreneurs must act strategically and compete to gain legislators' attention in order to influence the policy agenda. Indeed, the fact that advocacy organizations invest enormous sums of money and effort to gain policymaker attention demonstrates that they perceive significant benefit from these modes of engagement, such as sending emails, sharing resources, and hosting informational webinars. Recent work on policy entrepreneur influence has also shown important downstream effects, for example that contact with state legislators is associated with the consideration and introduction of new legislation (Anderson et al., 2020) and that email-based contact is associated with legislator voting

Artificial Intelligence - What to Know as a Legislator in Alabama



The Future Society

Tue 10/26/2021 1:36 PM

To: Schiff, Daniel S



Dear Representative Schiff,

We at The Future Society are reaching out to you to share a compelling story about the **important social and ethical implications of artificial intelligence (AI)** and to **invite you to a webinar** on what you need to know about AI as a state legislator. We believe that state legislators such as yourself have an important role to play in shaping Alabama's response to these critical social and ethical issues.

When Robert Julian-Borchak Williams went to work in his office at an automotive supply company in Detroit, he had no idea he would be handcuffed and arrested later that day in front of his wife and two young daughters. That day, Robert became one of the first Americans wrongfully arrested because of a false match of a facial recognition algorithm, an example of how faulty or misused AI algorithms can go awry. To hear more about how AI went wrong in this case and what policymakers can do about the social and ethical implications of AI, please [read more about Robert's story](#).

How can The Future Society support you?

- [RSVP for our webinar](#) on Monday, December 13 at 2PM ET / 11AM PT on **what you need to know about AI as a state legislator**, with speakers from The Future Society, Georgia Tech, and the National Conference of State Legislatures.
- **Share your thoughts:** What is the top concern or hope you have about AI policy? Let us know in a reply to this email and we'll try to address your comments in our webinar!

Thank you for your time and consideration of these important issues,

The Future Society



FIGURE 1 Sample legislator email: narrative + ethics treatment condition.

behavior (Bergan, 2009). Therefore, this study views measures of legislator engagement with email contact as valuable in informing our understanding of the effectiveness of policy entrepreneur influence efforts.

Ethical considerations

This research study was reviewed and considered exempt by the Institutional Review Boards at the Georgia Institute of Technology (Study H21224) and at Emory University (Study 00002979). Given the ethical implications of the research design and the potential to impact political processes, we took care to follow best practices from other correspondence studies in political science, policy, and public administration. In particular, we aimed to satisfy three main ethical principles: reducing deception, minimizing harm, and minimizing burden (Butler & Broockman, 2011).

Regarding deception, Bischof et al. (2022) urge researchers employing audit studies of public officials to minimize deception where possible, particularly the most problematic forms, ‘identity’ and ‘misinformation’ deception. In contrast, they note it is less feasible to avoid ‘activity’ and ‘motivation’ deception when the experimental design entails participants may not have a full understanding of study purposes. Our study design adheres to these recommendations in avoiding both misinformation and identity deception, while participants were not made aware of the research or its underlying purposes. That is, we did not obtain consent from participants and instead requested a waiver of informed consent, which was approved by the reviewing IRBs. Explicitly informing the public officials would have been atypical for the partner organization’s outreach and would have limited our ability to identify how policymakers interact with policy entrepreneurs in an authentic context.

We reduced identity deception involved in the study by partnering with a real organization that has expertise and a vested interest in this policy domain and the study’s research questions. Our study also did not involve misinformation deception, as policymakers received accurate information about the issue frames and topics, representative of typical AI policy discourse, through the email messages, links, and during the webinar. While policymakers did not know that they were participating in an email-based experiment or research study, they received emails from a real organization genuinely interested in connecting with them. However, legislative offices that participated in the follow-up survey described in Supporting information Section A7 were provided with consent information and information about the study.

Next, because the information provided in the emails was carefully researched and designed to be an accurate depiction of key problems and solutions in AI policy, we expect that the study benefited many policymakers by providing useful information, potential contacts, and follow-up resources curated specifically for legislators. Finally, the time burden on legislators and their staffs resulting from opening or reading the initial email was minimal and a standard part of work activities. Beyond this, participants voluntarily opted into additional activities, such as the webinar,¹⁶ likely due to genuine interest and a desire to learn more about this increasingly important policy domain.

ANALYSIS STRATEGY

To evaluate the effectiveness of the policy entrepreneur outreach, we calculate treatment effects using two methods. First, we calculate intent-to-treat effects (ITTs), representing the impact of the randomly assigned treatments on email engagement, including all legislative offices regardless of whether they opened the emails. ITTs are useful as a measure of whether police entrepreneur messages are influential in a broader sense, given that messages may frequently fail to reach policymakers in real-world settings. To identify ITTs, we regress the binary engagement outcome measure on treatment assignment and covariates.¹⁷ The covariates included are legislator party, chamber, gender, and tenure, as well as state-level prior experience with AI policy and legislature professionalism.¹⁸

Second, we estimate complier average causal effects (CACEs) by subsetting to compliers (legislative offices that opened the emails)¹⁹ and using the same regression approach described above.²⁰ This approach allows for unbiased causal identification because our experimental design approximates a placebo design (Gerber & Green, 2012). That is, we provide comparable treatments to those in the control (placebo) groups and measure the same outcomes as for the treatment groups. Importantly, the compliers (openers) in the control conditions are directly comparable to those in the treatment conditions given the symmetry of the emails before opening (e.g., same email subject line), and because the proportion of compliers (openers) in each group is nearly identical. This is shown in Table 1 below. Moreover, covariate balance is maintained across treatment groups in the subset of compliers.²¹ In general, we prefer the CACE estimates over the ITT estimates, as we aim to evaluate the effectiveness of influence strategies that *actually reach* policymakers. Nonetheless, we report both for our primary hypothesis, and we also report ITTs when we evaluate one of our exploratory hypotheses, necessary because compliance is strongly associated with the characteristic of interest, rendering CACEs inappropriate.

TABLE 1 Assignment and engagement by treatment group.

Treatment	Assigned	Opened	Clicked resource	Clicked register	Webinar
Control competition	1204 (16.7%)	516 (42.9%)	117 (22.7%)	115 (22.3%)	1 (0.2%)
Control ethics	1205 (16.7%)	563 (46.7%)	124 (22%)	119 (21.1%)	4 (0.7%)
Expertise competition	1187 (16.5%)	591 (49.8%)	158 (26.7%)	114 (19.3%)	2 (0.3%)
Expertise ethics	1208 (16.8%)	587 (48.6%)	191 (32.5%)	134 (22.8%)	5 (0.9%)
Narrative competition	1190 (16.5%)	559 (47%)	181 (32.4%)	114 (20.4%)	3 (0.5%)
Narrative ethics	1211 (16.8%)	594 (49.1%)	177 (29.8%)	131 (22.1%)	5 (0.8%)
Overall	7205 (100%)	3410 (47.3%)	948 (27.8%)	727 (21.3%)	20 (0.59%)

For the Policy Entrepreneur Effectiveness Hypothesis, we assess the impact of providing narratives or expertise relative to the generic control outreach strategy, and we pool across issue frames. To assess the relative effectiveness of strategies invoking narratives or expertise, we use a χ -test to evaluate whether the treatment effects for the narrative and expertise treatments are equivalent. For the Issue Framing Hypothesis, we isolate the treatment effects of the issue frames, pooling across influence strategies.

For the exploratory Strategies by Issue Framing Hypothesis, we use interactive model specifications to estimate treatment effects for each unique treatment and use χ -tests to assess treatment effect differences. Finally, for the exploratory Prior Experience Hypothesis, we interact the expertise and narrative treatments with legislature prior experience with AI policy to estimate treatment effects for legislators in states with high and low prior AI experience. As a related but distinct (and not pre-registered) extension of this line of inquiry, we follow Anderson et al. (2020) and also evaluate whether legislative capacity (or professionalism) moderates policy entrepreneur influence. However, we note that a limitation of these exploratory analyses is that the measures that we use are coarse, available at the level of states rather than individuals.

RESULTS

First, Table 1 presents descriptive information on the number of legislative offices in our sample²² that were assigned to each treatment, that opened the emails, and that engaged with the emails. Note that the percentages presented in the Assigned column are relative to the total number of legislative offices; the percentages presented in the Opened column are relative to the number of offices assigned to the respective treatment group; and the percentages presented in the remaining columns are relative to the number of offices in the respective treatment group that opened the email. This information is also presented in a CONSORT diagram, showing the number of legislative offices at various stages of the study, in Figure 2 for the entire sample, and in Figure A1 in Supporting information Section A1 by treatment group. Table 1 reveals that the open rate was similar across treatment groups (43–50%) and suggests differences in engagement, especially for clicking on the resource provided in the email, between the control and the expertise and narrative treatment groups. The following section explores these possible effects in more depth.

Does the provision of expertise or narratives influence legislators?

We next consider whether the Policy Entrepreneur Effectiveness Hypothesis holds. In short, does the use of narrative or expert information by policy entrepreneurs successfully engage policymakers as compared to more generic outreach? Table 2 presents the results for the main legislator sample based on use

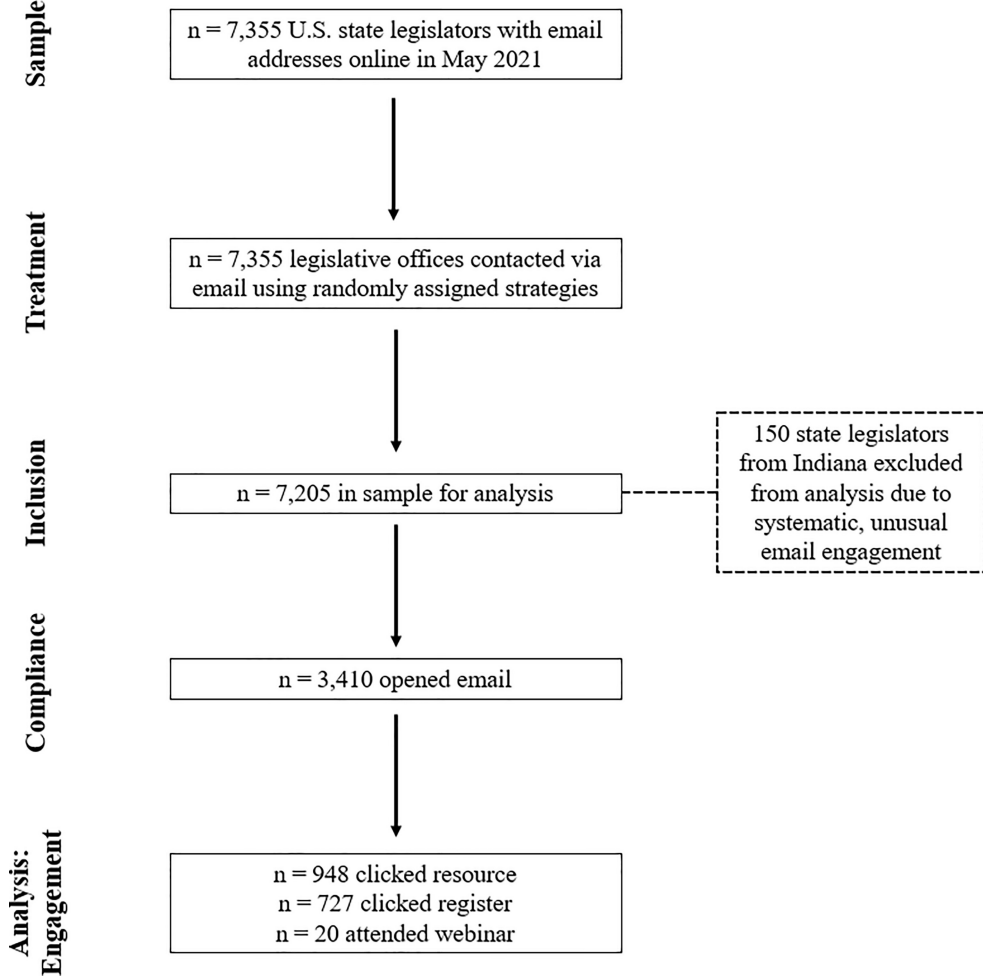


FIGURE 2 CONSORT diagram.

TABLE 2 Impact of policy entrepreneur strategies on legislator engagement.

	Engagement			
	ITTs		CACEs	
	(1)	(2)	(3)	(4)
Either strategy	0.047*** (0.008)		0.073*** (0.016)	
Expertise		0.045*** (0.010)		0.064*** (0.018)
Narrative		0.048*** (0.010)		0.082*** (0.018)
N	7205	7205	3410	3410
R ²	0.036	0.036	0.062	0.062

Note: With robust SEs and including covariates. Full regression results with covariate information included in Table A8 in Supporting information Section A4.

[†] $p < 0.1$

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

of either strategy (pooled) or each strategy separately. The outcome of interest is the binary indicator of whether legislative offices engaged in at least one of the possible activities: opening a fact sheet provided in the email, clicking to register for the webinar, etc.²³

We find that the use of both strategies by policy entrepreneurs is effective, supporting the Policy Entrepreneur Effectiveness Hypothesis. When compared to a control²⁴ message of a similar style and length that provides more general information about the organization—including the same invitation to join a webinar and reply to the email—both expert information and narratives significantly increase policymaker interest. Comparing all legislative offices in our study, the ITT results reveal that treatment increased engagement by almost 5 percentage points ($p < 0.01$). Based on the CACE results, those who opened either treatment email exhibited increased engagement by 7.3 percentage points ($p < 0.01$) compared to control, with effects slightly larger in the narrative group (8.2 percentage points) versus in the expertise group (6.4 percentage points). These are substantively large effects in light of comparable recent studies.²⁵ The findings also comport with some prior research on narratives and expertise, including work by Jones (2014a) showing that individuals are similarly persuaded by narratives and facts regarding climate change.

More concretely, subsetting to offices that opened their assigned emails, approximately 24.3% of legislators in the control groups took at least one action upon receiving the emails compared to 31.2% of legislators in the expertise treatment group and 32.6% of legislators in the narrative treatment group. This corresponds to a 28.3 percent increase in engagement for those who received expert information, and a 34.2 percent increase in engagement for those who received narratives. When including the entire sample, not just those who opened their emails, 10.9% of individuals in the control group engaged in at least one action, compared to 15.4% in the expertise treatment group and 15.7% in the narrative group, translating to engagement increases of 40.7% and 43.7%, respectively.

Figure 3 presents the CACE results using a coefficient plot with 95% confidence intervals, and includes alternative model specifications as robustness checks. Namely, in addition to the (1) primary specification, we present results (2) without covariate adjustment, (3) when including Indiana, and (4) when excluding states for which we observed identical click rates for the resource and webinar.²⁶ Across specifications, results are nearly identical.²⁷

While both influence strategies employed by policy entrepreneurs are statistically effective, they are not statistically distinct. Though the narrative treatment leads to a larger magnitude increase in legislator engagement as compared to the expertise treatment, a χ -test indicates these two strategies are not statistically distinguishable ($p = 0.77$ for the ITT results and $p = 0.34$ for the CACE results). Thus, while there are theoretical reasons to expect either narratives or expertise to be more influential strategies (as per the Dominance of Expertise and Narrative Hypotheses), we instead find that these strategies are similarly, and meaningfully, impactful. Nevertheless, it is notable that for a highly technical policy domain that has been inundated with calls for expertise-building, such as massive efforts to promote training of STEM workers and PhD AI researchers, narratives are at least as critical in engaging policymakers vis-à-vis the emerging AI policy agenda.

How do issue frames impact legislator engagement?

Next, we turn to the question of whether use of distinct issue frames by policy entrepreneurs affects engagement by policymakers. We anticipated as per the Issue Framing Hypothesis that an issue frame (or policy frame) emphasizing economic and technological competition dimensions would be more influential for policymakers, given substantial focus on AI's innovative potential in policy discourse, and because policymakers may already be inclined to emphasize economic-type issues over ethical ones.

Yet, our results do not indicate a preference for economic over ethical concerns. Specifically, amongst those who opened the email, legislative offices that received the ethics frame were about 1.5 percentage points more likely to take at least one action than legislative offices receiving the competition frame, though this difference is not statistically significant ($p = 0.33$). To put this into context, the

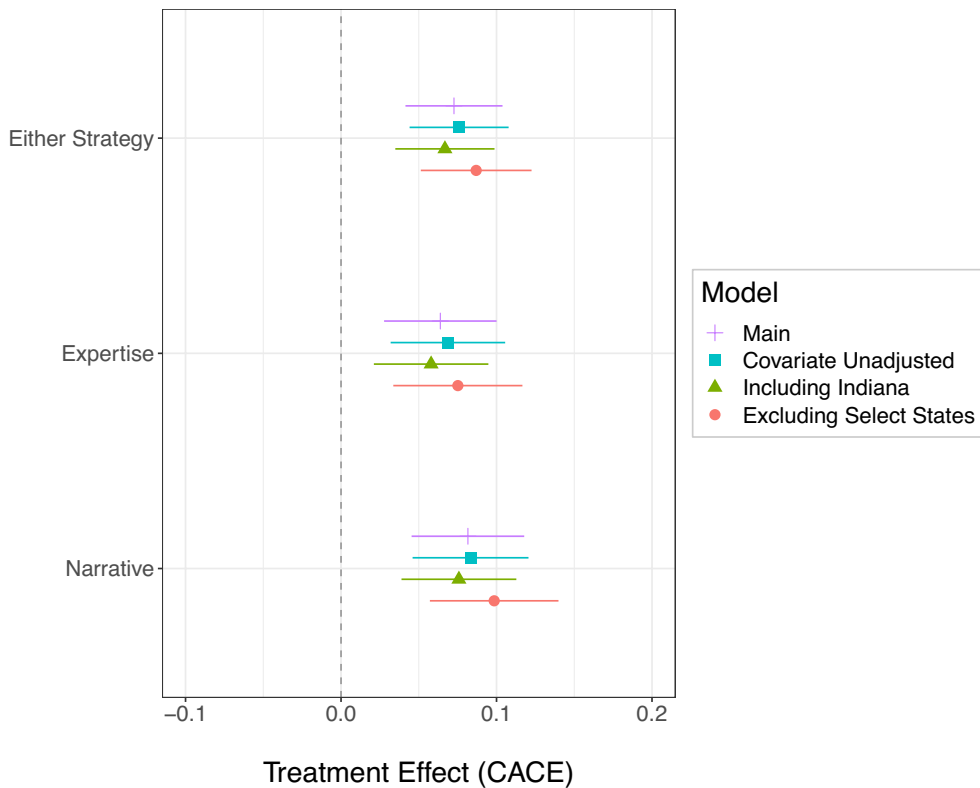


FIGURE 3 Impact of narratives and expertise on legislator engagement. Treatment effect point estimates shown with 95% confidence intervals. Full regression results with covariate information included in Tables A8–A11 in Supporting information Section A4.

covariate-unadjusted group differences indicate that around 29.0% of legislators who opened the email in the competition group took at least one action as compared to around 30.0% of legislators in the ethics group. Thus, despite ample and arguably growing pressure to emphasize AI's economic, competitive, and geopolitical dimensions in policy discourse, legislators were at least as likely, if not marginally more likely, to express interest in AI's ethical implications.

We also considered whether specific issue frames interacted differently with various policy entrepreneur strategies. Table 3 displays the covariate-unadjusted engagement rates amongst compliers for combinations of strategies and frames, along with corresponding p -values of differences across these combinations. While we hypothesized that narratives would be differentially engaging based on the issue frames employed, we find that narratives are equally engaging across the ethics and competition issue frames ($p=0.55$). Moreover, we find no clear evidence of differences between issue frames for the control ($p=0.81$) and expertise ($p=0.06$) policy entrepreneur strategies as well. Instead, the greatest visible differences are between each influence strategy and the control group.

To evaluate the stability of this pattern, we draw on an additional source of data. Through the use of tracking links tied to each individual strategy by issue frame combination, we were able to track through the registration platform for the webinar, Eventbrite, how many individuals in each treatment group sought out information about the webinar.²⁸ The data in Table 4 reveal a very similar pattern. There were minimal differences in page views *across* issue frames, but distinct differences for both narratives and expertise relative to control *within* each issue frame. For example, for the control group, a very similar number of individuals visited from the ethics frame group (376) as from the competition frame group (366). In the expertise group, a larger number of individuals visited overall, with a highly similar number of visitors from the ethics group (421) and competition group (433). The narrative group acted

TABLE 3 Engagement rates for distinct strategy and issue frame combinations.

	Ethics	Competition	<i>p</i> -value of diff.
Control	0.24	0.25	0.81
Narrative	0.32	0.33	0.55
Expertise	0.34	0.29	0.06
<i>p</i> -value (Narr. vs. Control)	0.00	0.00	
<i>p</i> -value (Exp. vs. Control)	0.00	0.13	
<i>p</i> -value (Narr. vs. Exp.)	0.48	0.08	

TABLE 4 Webinar registration views by treatment group.

	Ethics	Competition
Control	376	366
Narrative	465	466
Expertise	421	433

similarly, with the highest number of visitors overall and a nearly identical number from the ethics group (465) and competition group (466).

That these patterns are highly stable regardless of the use of quite distinct types of issue frames suggests that *it is the strategies themselves that are most salient in policy entrepreneur influence efforts*. Moreover, the number of visitors from the narrative group was substantially larger than the control group (90–100 more views) as well as larger than the number of visitors from the expertise group (30–40 more views), which provides further evidence about the relative effectiveness of the influence strategies compared to control. It even provides suggestive evidence about the potentially heightened effectiveness of narratives versus expertise. However, given more limited data about the source of these numbers (e.g., uncertainty around how many of these views are repeat visitors), and because the pre-registration did not emphasize this data source, we cannot safely conclude that narratives are more effective.

Engagement by legislative prior experience and capacity

Finally, we consider whether certain legislative characteristics moderate the effectiveness of policy entrepreneur influence strategies. We hypothesized as per the Prior Experience Hypothesis that legislators in states with less prior experience in AI policy would be especially in need of expert information to advance their ability to work effectively in this policy domain. As a proxy for state-level experience with AI policy, we use data from the National Conference of State Legislatures (NCSL) indicating the number of proposed and/or passed pieces of legislation on AI in each state between 2019 and 2021.²⁹ We binarize these count data such that the top 50% of states are considered to have high prior experience with AI policy, and the rest low experience. This essentially divides states into those who have considered or passed at least one piece of AI legislation, and those who have not. Again, note that this means the experience variable is measured at the state level, and is thus only a rough proxy for individual legislator experience with AI.

Table 5 reports CACE results based on interacting the expertise treatment with state-level prior AI policymaking experience. The coefficient on the interaction term is positive and significant ($p < 0.01$), indicating that policymakers in states with low AI experience are indeed more likely to pursue expert information than policymakers in states with greater AI experience. These results comport with expectations. However, legislators in states with low AI experience were not only

more likely to engage with expertise; they were also more likely to engage with narratives ($p < 0.01$). Figure 4 displays the heterogeneous effects of both policy entrepreneur strategies for legislators in states with low versus high AI experience. Compared to legislators in high experience states, legislators in low experience states were 10.2 percentage points more likely to take action in response to expert information, but also 9.7 percentage points more likely to take action upon receipt of a narrative about AI policy.

Relatedly, we explored whether state-level legislative professionalism (or capacity), measured using the adjusted Squire Index, moderates the effectiveness of policy entrepreneur strategies. Figure 4 displays

TABLE 5 Impact of AI experience on engagement with expertise.

	Engagement
Expertise	0.016 (0.028)
Low AI experience	-0.066* (0.027)
Expertise × Low AI experience	0.102** (0.037)
<i>N</i>	2257
<i>R</i> ²	0.050

Note: CACE results based on interacting the expertise treatment with a binary indicator variable for state-level prior AI policymaking experience. We use robust standard errors and include covariates. Full regression results with covariate information included in Table A12 in Supporting information Section A4.

⁺ $p < 0.1$

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

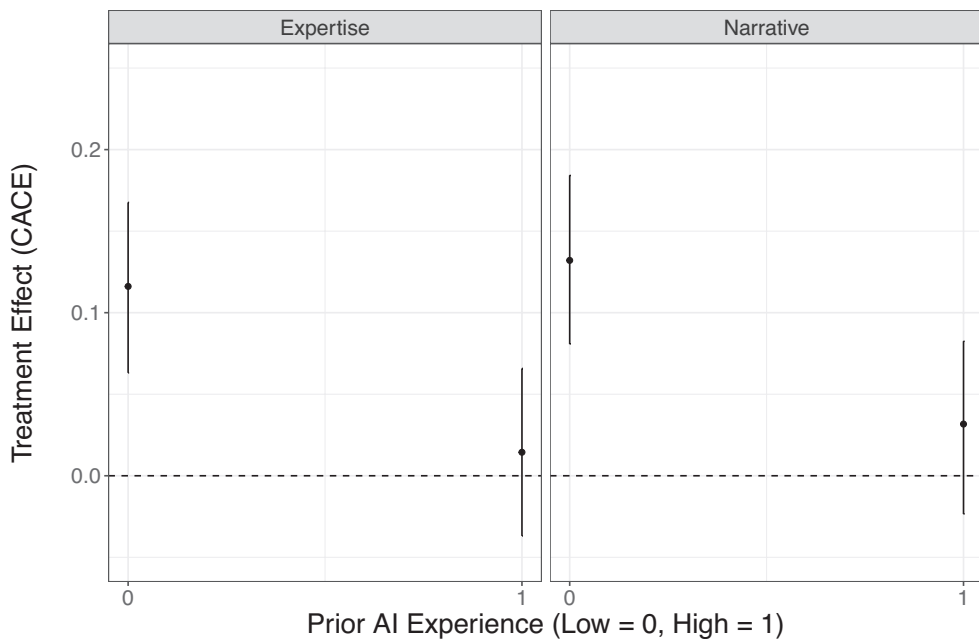


FIGURE 4 Impact of state-level AI experience on legislator engagement with expertise and narratives. CACE results based on interacting the expertise and narrative treatments with a binary indicator variable for state-level prior AI policymaking experience. Conditional average treatment effect point estimates shown with 95% confidence intervals. Full regression results with covariate information included in Tables A12 and A13 in Supporting information Section A4.

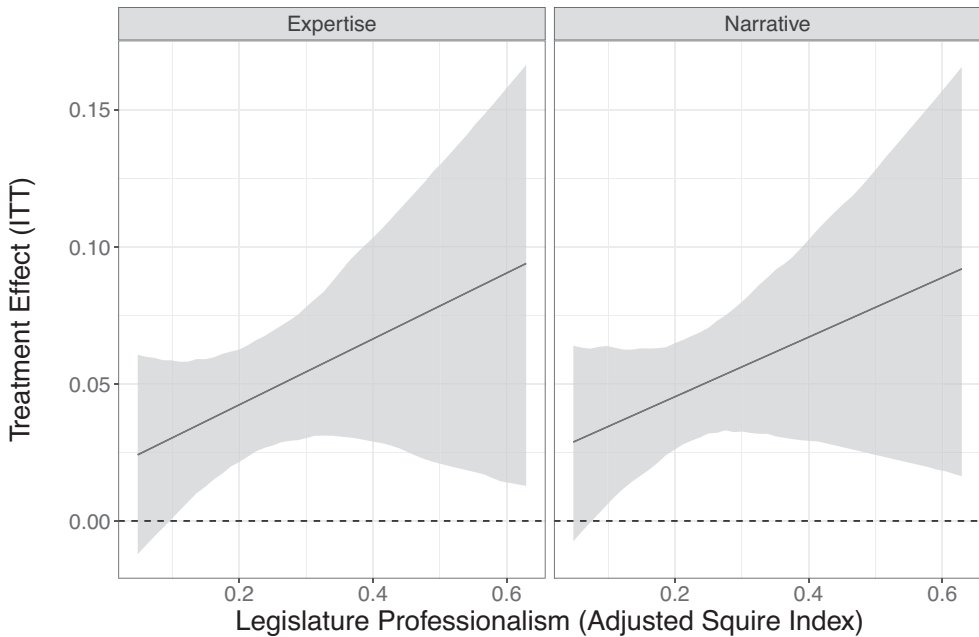


FIGURE 5 Impact of state-level legislative capacity on legislator engagement with expertise and narratives. ITT results based on interacting the expertise and narrative treatments with a continuous variable for the state-level Adjusted Squire Index legislature professionalism score. The estimated trend lines represent conditional average treatment effects along the range of professionalism scores, with the shaded areas indicating the 95% confidence regions. There is greater uncertainty for higher levels of professionalism due to fewer observations. Full regression results with covariate information included as [Table A14](#) in Supporting information Section A4.

the heterogeneous effects as ITTs. We use ITTs rather than CACEs in this case because legislature professionalism, a measure of resources and staff available to legislators, strongly influenced whether legislative offices opened the emails in the first place. [Figure 5](#) suggests that state-level legislative capacity is also associated with increased engagement with AI policy. Yet, while capacity seems to drive increased engagement with narratives (10.5 percentage point increase) and expertise (12.1 percentage point increase), the effects are not statistically distinguishable from control (p -value for expertise = 0.17; p -value for narratives = 0.24).³⁰

These additional exploratory findings provide helpful context for evaluating potential policy entrepreneur influence efforts. Higher-capacity legislatures are better positioned to engage with policy entrepreneurs and to be responsive to information about critical policy issues. Yet, we cannot conclude that the expertise and narrative strategies are differentially effective for policymakers in these legislatures compared to more generic outreach. Furthermore, legislative offices in states with little prior AI policy work are especially likely to engage with policy entrepreneurs, and they are receptive to both expert information and narrative strategies. In sum, the results support a consistent pattern: Narratives appear at least as influential as expert information, even for an especially complex and technical policy domain.

DISCUSSION AND CONCLUSION

Key findings and implications

Highly technical, complex policy domains have typically been expert-dominated spaces. This is true nowhere if not with respect to AI policy. Actors in the public, private, and non-governmental sectors—in

the United States and globally—have urgently called for expert information, training of more STEM workers and AI specialists, and knowledge-building in government. Yet, despite the seeming ubiquity of the expert orientation in AI policy (Schiff, 2023), we find that persuasive narratives are at least as effective in engaging state legislators as they work to formulate the early AI agenda.

The findings demonstrate that, while the provision of expert information by policy entrepreneurs remains influential, the provision of narratives was at least as likely to gain policymaker attention. Legislators were about 30 percent more likely to seek out additional information when they received either expert information or a persuasive narrative. Moreover, this pattern of influence does not appear to be isolated to narrow aspects of AI, such as only applying to issue frames that emphasize social and ethical harms. Indeed, whether policy entrepreneurs emphasized social and ethical dimensions of AI, or implications related to economic and technological competitiveness, narratives remained equally influential. Furthermore, despite the traditional association of science and technology policy with high-level concerns surrounding economic growth and innovation, an issue frame promoting ethical consideration was at least as engaging as an economic-style frame.

One ambition of policy scholarship is to provide actionable insights to guide policy actors (Anderson et al., 2020). We find here that policy entrepreneurs, in this case a non-partisan civil society organization, can make effective use of both expert information and narratives in their influence and advocacy efforts. Furthermore, the results suggest that legislators in states without much prior policy experience are especially inclined to seek out expert information and narratives. Future work is needed to better understand why policymakers seek out these narratives, and which features of the narratives are appealing. It may be that policymakers are drawn to narratives as a way of developing their own messaging for political deliberation and constituent communications. It may also be that policymakers are directly persuaded by narratives much in the way that members of the public are. The results do caution that legislators in less professionalized legislatures may struggle with limited capacity to engage with policy entrepreneurs, meaning that expanded efforts are needed to reach, and understand the needs of, these legislative bodies, an ongoing problem in state-level policymaking (Fortunato & Parinandi, 2022).

Limitations and future work

A limitation of the study and common challenge with domain-specific research is the extent to which these results might extend to other policy domains. The findings could in part reflect esoteric aspects of AI policy and the specific advocacy activities examined here, or they could reflect general features of policymaker attention to facts, stories, and contending issue frames. Relatedly, as the partner organization is relatively new and small, whether treatment effects differ for other types of policy entrepreneurs, such as larger or more established organizations or those with an actual or perceived ideological slant, should be a topic of future study. Additional research is also needed to examine how policymakers in national and international settings are influenced by these strategies and frames, and to what extent different institutional environments, rule-making dynamics, political ideologies, and economic and technological development play a role.

Furthermore, an important open question concerns the extent to which initial policymaker engagement translates to long-term agenda-setting influence and policy change. That approximately a thousand legislative offices took the costly action of clicking on links to additional resources suggests the potential for influence is more than minimal, and more than 75% of webinar attendees were legislators rather than staffers. An additional, if anecdotal, indication of more lasting influence is that the study resulted in the authors being contacted by legislators in more than one state to advise on the adoption of AI systems within state government and to assist with writing AI legislation. Moreover, we administered a survey to all state legislators approximately two months after the experiment, asking about their attitudes on AI policy. While the sample size is modest (about 130 respondents), we found that legislators assigned to the expertise and narrative treatment groups, compared to control, were more likely to express alignment with their treatment issue frames, indicating that the treatment effects may

have persisted and impacted policy preferences and anticipated regulatory behavior.³¹ Along these lines, further research should be devoted to exploring the pathways through which initial or repeated contact between policy entrepreneurs and policymakers leads to downstream legislative consequences (e.g., bill introduction and voting).

The evolving AI context: Implications of generative AI

Since fielding our experiment in late 2021, AI has received unprecedented levels of public attention, most prominently surrounding large language models (LLMs), owing both to advancements in AI capabilities and to OpenAI's efforts to make these powerful tools widely available to and easily accessible by the public. ChatGPT, reported to be the fastest growing consumer application in history (100 million users in under two months) (Hu, 2023), has spurred rapid incorporation of LLMs into consumer-facing products, as well as a technological race between commercial competitors like Google and Microsoft. Members of the public, scholars, and policymakers are now increasingly aware of the growing impact of AI on career tasks and labor disruption, teaching and learning, and numerous other areas of daily life. Questions surrounding data collection and privacy, bias and inequality, accountability and transparency, and other environmental and social implications will continue to shape public discourse and policy deliberations as society grapples with the impacts of increasingly general-purpose and generative AI systems.

A key goal of our study was to understand how legislators engage with novel and complex policy topics, namely AI. These recent trends highlight that agenda-setting in emerging technology policy domains can be highly dynamic and uncertain as technologies advance and shape the socio-technical environment. In this case, we strongly suspect that the salience of AI policy has increased substantially. In turn, legislators may be even more willing to engage with AI policy than what we measured in our experiment, and it is also possible that preferences for narratives and expert information may have shifted as well. Given widespread, personally felt public impacts of LLMs, narratives may now be especially influential, although assessing this hypothesis should be the subject of future work. Messages with human impact stories including specific personal details or other signals of (human) source credibility may be increasingly important if policymakers are on the receiving end—either in reality or in perception—of machine-generated content, which could dilute the perceived authenticity and value of constituent or interest group communication (Kreps & Kriner, 2023).

Beyond the current study, LLMs and evolving AI tools present new opportunities for researchers studying policy entrepreneur influence strategies and the impacts of narratives and expert information on policymakers.³² For example, generative AI can be used to produce compelling and comparable policy narratives through text, images, and videos, for use in survey experiments, field experiments, and other research designs involving researcher-crafted interventions. For sources of observational data, such as the text of policy entrepreneur communication, LLMs can be used to classify strategies, identify narrative elements, and even predict the hypothetical persuadable targets of messages. Scholars building on this study should therefore examine AI not only as a policy topic but also as a policy and research tool, while taking special care to ensure these techniques are used ethically, and in the public interest.

Theoretical contributions

To return to the theoretical contributions of the current study, this work helps to realize ambitions in policy scholarship to unpack the 'black box' common in complex policy processes, to integrate NPF theory with agenda-setting dynamics, and to rigorously measure and compare the effectiveness of different policy entrepreneur influence strategies (McBeth & Lybecker, 2018; Petridou & Mintrom, 2021). In particular, this study demonstrates that narratives can be successfully applied

to better understand policy entrepreneurship in the context of agenda-setting, and play a meaningful role even for the highly technical and complex domain of AI policy. Indeed, the complexity, uncertainty, and ambiguity associated with AI policy may help to explain why policymakers appear susceptible to diverse influence strategies and framing efforts despite an ostensible need for ‘hard’ evidence.

Along these lines, the study contributes through extending our understanding of how topics like policy entrepreneurs, framing, and technology policy can factor into the NPF. First, we extend the literature on facts versus narratives to a new, important domain, AI policy. Second, we apply a relatively novel methodology to explore questions in the NPF; we use a field experiment with email engagement outcomes to causally identify policy entrepreneur influence, which can be empirically difficult and is lacking in the current literature. Next, as encouraged by Jones (2018), we also demonstrate how framing and narratives can be conceptually and empirically translated and even intersected, rather than conflated and left underdefined. In this case, results indicate that influence strategy (narratives or expertise) may be more important than, and invariant to, a social-ethical or economic-competitive framing of AI policy.

In line with Ertas (2015) and McBeth et al. (2014), NPF scholars have undertaken efforts recently to analyze the role of *narrators* themselves, for example by assessing how narrator (in)congruence and trust affects persuasiveness (Lybecker et al., 2022; McBeth et al., 2022). Our study elaborates on Petridou and Mintrom (2021) in showing how policy entrepreneurs may have the freedom within a given policy issue to operate as knowledge/information brokers (brokering expertise), or alternatively as policy narrators (marketing narratives) with implications for their level of influence. In both cases, the entrepreneur may be operating as a problem or issue broker, advancing a certain policy domain to the agenda.

Though our study does not experimentally manipulate features of the narrator, it does raise questions worthy of future research that can advance the core research agenda of the NPF and agenda-setting scholarship. Under what conditions do policy entrepreneurs decide to serve as narrators versus expert brokers, or employ a combination strategy (e.g., narratives within facts or vice versa)? How do characteristics of the policy entrepreneurs (e.g., organization type, perceived ideology) affect credibility of their messages with respect to each strategy? How do micro-level influence efforts targeting actors like policymakers aggregate into meso- or macro-level impacts in the policy process? Addressing these and other questions can be fruitful for building on our understanding of policy entrepreneurs in the NPF.

Lastly, while much of the literature on narratives focuses on their use in media or to influence the public, this study demonstrates that narratives can also be used by policy entrepreneurs to influence policymakers. Just as narratives can support the translation of policy conditions into problems in the eye of the public, so too can they shape the perspectives of policymakers who are wrestling with contested visions around critical emerging policy agendas like that of AI policy.

ACKNOWLEDGMENTS

We are grateful to the following individuals and organizations for their support and feedback: The Future Society, the National Conference of State Legislatures, Yolanda Lannquist, Samuel Curtis, Nicolas Moës, Ashok Goel, Pamela Greenberg, Ron Arkin, Natália S. Bueno, Ellen Zegura, Juan Rogers, Scott Ganz, Jason Borenstein, Rob DeLeo, attendees at the Elites & Experiments Conference and the annual meeting of the Association for Public Policy Analysis and Management, and anonymous reviewers.

FUNDING INFORMATION

The authors have no sources of funding to report for this research.

CONFLICT OF INTEREST STATEMENT

The authors have no conflicts of interest to report.

DATA AVAILABILITY STATEMENT

Replication materials and data available through OSF at <https://osf.io/cfb9u/>.

ETHICS STATEMENT

This research study was reviewed and considered exempt by the Institutional Review Boards at the Georgia Institute of Technology (Study H21224) and at Emory University (Study 00002979), the authors' home institutions at the time the study was fielded.

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ENDNOTES

- ¹ Our pre-analysis plan and replication code and data are available through OSF at <https://osf.io/cfb9u/>. Note that we use some language from our pre-analysis plan in this paper. Additionally, a version of this project was part of a dissertation.
- ² Notably, these kinds of efforts are under study by scholars in AI as well, exemplified by work at CSET (Imbrie et al., 2021) and the Global AI Narratives Project out of the Leverhulme Centre for the Future of Intelligence and the Royal Society (Cave et al., 2018).
- ³ Importantly, while perhaps a common understanding of policy entrepreneurs is as 'heroic' and strategically skilled individuals outside of government who are especially engaged in advocacy, policy scholarship understands entrepreneurs more broadly: They can be inside and outside of governments, individuals or organizations of various forms, and can adopt a variety of strategies. As such, this study embraces and seeks to advance an understanding that policy entrepreneurs may take on multiple functions, e.g., as narrators or expert entrepreneurs, and thus employ diverse strategies. While this paper primarily focuses on the effectiveness of the strategies themselves, we return to theoretical implications pertaining to the roles of policy entrepreneurs in the Discussion.
- ⁴ For those attentive to the NPF research program, note that this accords with the micro-level "power of characters" NPF hypothesis as articulated in McBeth et al. (2014).
- ⁵ A possible source of confusion is the distinction between a narrative and a frame. Simply, narratives can contain or promote one of many possible issue frames, while issue frames need not be accompanied by a narrative, as the experimental design in this study makes clear.
- ⁶ For additional information about the benefits of an experiment in this context, see Supporting information Section A1.
- ⁷ The collaboration pertained to shared research goals; no compensation was involved. TFS benefited through learning from the research, as well as from increased exposure and engagement with policymakers.
- ⁸ One potential source of concern in evaluating the treatment effects identified in the study is that state legislators could have perceived a certain political leaning of the organization in general or with respect to some of the treatments. See Supporting information Section A1 for a discussion of this issue. Broadly speaking, TFS can be understood as a relatively politically neutral problem broker (Knaggård, 2015) focused on advancing AI as a policy problem (or issue area), but as the study demonstrates, they may also serve as an expert entrepreneur or policy narrator.
- ⁹ See Supporting information Section A1 for more details on the sample.
- ¹⁰ Given the small number of independents (67 of the total 7355 legislators), we randomly assign these to either a Democratic or Republican block.
- ¹¹ Importantly, messages may convey different degrees of narrative, and receivers may infer one (or more) narratives from even a single word. It is therefore possible that our control message, or even expertise messages, may have invoked a narrative for some participants. For example, the work of The Future Society (TFS) with a large number of policymakers and in a large number of countries described in the control message may have conveyed a narrative of AI as a 'policy topic on the rise.' This could have made the control message less distinct relative to our "narrative" messages. However, the fact that we do find differences in engagement between the control and narrative messages implies the power of clearly described victims, villains, plots, problems, and morals, as better reflected in the construction of our narrative messages (higher degree of "narrative-ness").
- ¹² It is possible that the description of The Future Society in the control message, particularly the reference to its 501(c)(3) status, may have reduced engagement due to a perception of soliciting donations. The email subject did imply information for legislators, however, and we still see engagement with control messages (22–23%). Still, the narrative and expertise strategies may be relatively less (or more) effective in comparison to an alternative outreach message.
- ¹³ The full fact sheets and stories are hosted on the organization website and available by request. See Supporting information Section A6.

- ¹⁴ Measuring both intent to participate and participation is a strategy also employed by McClendon (2014). We utilized a third-party tool, SalesHandy, to track email opens and link clicks. We also undertook a variety of strategies, including dynamic use of legislator and state names in email text, avoiding common spam words, pilot testing, performing an email campaign ‘warm-up’ over time, and other server-side strategies to increase open rates and decrease spam rates.
- ¹⁵ This measurement approach deviates slightly from the pre-registration, which proposed using a count measure. We chose to make this alteration because the binary outcome is easier to interpret and is very highly correlated with the count measure. We present additional results for different outcomes separately in Supporting information Section A3.
- ¹⁶ The partner organization hosted the webinar in December 2021 with 16 state legislators and 4 staffers from 9 states in attendance.
- ¹⁷ For all regression specifications, we use two-tailed *t*-tests and heteroskedasticity-robust standard errors, with statistical significance assessed primarily at the 5% level. This is a minor deviation from the pre-registration in which we registered some one-tailed and some two-tailed *t*-tests. We opt for all two-tailed *t*-tests to both be more conservative and preserve easy comparability. Additional information about covariates and power can be found in Supporting information Sections A2 and A5.
- ¹⁸ As blocks vary by size, the probability of treatment assignment varies slightly by block, which must be accounted for in the analysis strategy. Our approach is described in Supporting information Section A2.
- ¹⁹ Note that while measuring email opens is a common approach in research and marketing, it cannot fully reveal whether an individual deeply reads or engages with the messages. This likely means our effect sizes are underestimates of the effects on deeply engaged readers (‘true’ compliers).
- ²⁰ Supporting information Section A3 describes the methods and presents results for our original pre-registered analysis strategy—identifying CACEs through instrumental variables (IV) regression. We present an alternative CACE identification strategy in the main text for simplicity; effects are consistent and even larger in magnitude using the IV strategy.
- ²¹ Amongst compliers, *F*-tests indicate that none of the covariates predict assignment to treatment, either for the three influence strategy options ($p < 0.265$, $p = 0.833$, $p = 0.322$), or between the two issue frames ($p = 0.550$).
- ²² Our main analytical sample of $n = 7,205$ excludes the 150 legislators from Indiana, as the unusual click behavior (100% click rate on resources, and 0% click rate on webinar registration page) that we observed suggests that an automated email system (perhaps for security reasons) was in use. We present various robustness checks later in the Results and SI; the findings are robust.
- ²³ In practice, almost all legislative offices that engaged did so through one of these two lower-effort activities, such that the binary outcome essentially reflects engagement with the fact sheet (or story) or interest in the webinar. As anticipated, relatively few legislators replied to the email or attended the webinar. Inclusion or exclusion of those more costly activities thus has essentially no effect on study results, as shown in Table A6 in Supporting information Section A3.
- ²⁴ It is not a priori obvious to what extent the control messages would be effective in themselves, which raises an interesting question about whether policymakers were interested in the coalition/relationship-building aspect of engaging with an unfamiliar policy actor, or perhaps expectant about receiving future information about policy problems or solutions.
- ²⁵ For comparison, recent studies of legislator engagement focusing on email click rates have found effects of varying significance and size, ranging from 0.4 percentage points to 4.1 percentage points (Butler et al., 2019; Pereira, 2022; Purtle et al., 2022; Senninger & Seeberg, 2022). Our ITT results (about 4–5 percentage points) are similar in magnitude to the 3.8 and 4.1 percentage point ITT results in Senninger and Seeberg (2022) and Pereira (2022), respectively. Overall then, the influence strategies studied here are as or more effective than treatments such as manipulating co-partisanship, co-nationality, policy issue, and the amount and specificity of expert information provided.
- ²⁶ Similar to the logic for excluding Indiana, it is possible that these states employ automated email systems to screen links for security reasons. This select sample retains about two-thirds of the full sample, with $n = 5,268$ total legislators.
- ²⁷ We also find the same results when using the alternative count outcome measure as when using the binary outcome measure. See Table A6 in Supporting information Section A3.
- ²⁸ The data captured by Eventbrite on the number of registration page views differ from those captured through SalesHandy based on direct link clicks from the emails. Eventbrite is able to track any use of these links to visit the site, accounting for the larger overall number of visits to the registration page. Legislative offices may have visited the registration page multiple times or may have shared the link amongst staffers via various channels. We therefore report absolute numbers rather than percentages. We rely on the SalesHandy data for the primary results and present the Eventbrite data as a helpful, exploratory addition.
- ²⁹ This time period is appropriate given the relative recency of AI policy efforts at the state level.
- ³⁰ The power analyses in Supporting information Section A5 suggest reduced power to estimate interactive treatment effects such as these.
- ³¹ See Supporting information Section A7 for some results.
- ³² We thank an anonymous reviewer for the encouragement to explore this important topic in discussing the implications of our study.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

How to cite this article: Schiff, Daniel S. and Kaylyn Jackson Schiff. 2023. "Narratives and Expert Information in Agenda-setting: Experimental Evidence on State Legislator Engagement With Artificial Intelligence Policy." *Policy Studies Journal* 51(4): 817–842. <https://doi.org/10.1111/psj.12511>.