Rhetorical Strategies in Reports for Policy: A Multi-Case Study of Intermediary Evidence-to-Policy Communication on Antimicrobial Resistance

Christine Ackerley

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Reading Committee:

Leah Ceccarelli, Chair

Ann Bostrom

Sarah Cusworth Walker

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Abstract

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Christine Ackerley

Chair of the Supervisory Committee:

Leah Ceccarelli

Department of Communication

A major challenge to evidence-informed policy is effectively communicating the results of research between multiple communities of experts and policymakers. Each year, hundreds of thousands of "grey literature" documents — such as reports, briefings, and discussion papers — are produced to inform public debate and strengthen the knowledge base for good policy decisions. Yet despite their ubiquity, the creation and effects of grey literature are relatively understudied in evidence-to-action research. In this dissertation, I focus specifically on grey literature authored by intermediaries — a diverse group of actors such as think tanks, non-profits, and review commissions — that function as go-betweens for research producers and policymakers. Because intermediaries play a central role in mobilizing policy-relevant research, they are increasingly recognized as key actors in evidence communication. However, little attention has been paid to the rhetorical strategies they use to establish credibility and influence policy through these documents.

This dissertation combined textual–intertextual rhetorical analysis with a multiple-case study design to better understand how intermediaries created and used grey literature reports. Focusing on antimicrobial resistance (AMR) policy, I conducted three case studies of AMR-focused reports by analyzing their production context, textual features, and reception over more than five years post-publication. This approach identified a range of rhetorical strategies and theorized their function using concepts from rhetoric, expertise studies, public policy research, and technical communication.

I examined the rhetorical challenges faced by intermediaries, who had to establish credibility in complex, multi-stakeholder contexts. I found that successful intermediaries used specific rhetorical strategies to cultivate an *ethos* of interactional expertise. Next, I integrated rhetorical theories with insights from the Multiple Streams Framework, in order to identify three promising rhetorical moves to advance policy agenda-setting and theorize how they worked. Lastly, through analysis of reception evidence, I proposed that an underappreciated function of these reports is how they serve as enduring rhetorical resources for readers to use over time. I illustrated three ways the reports promoted ongoing use by others, and proposed practical heuristics intermediaries can use to operationalize these observations.

Together, the strategies I identified contribute to the rhetorical repertoire available to intermediaries working to influence policy. This dissertation illustrated that these reports operate not as static artifacts, but as dynamic rhetorical efforts before and beyond the moment of publication.

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Abbreviations

AMR	Antimicrobial resistance
CSE	Centre for Science and Environment
FAO	Food and Agriculture Organization of the United Nations
IACG	Ad hoc interagency coordination group on AMR
OECD	Organization for Economic Cooperation and Development
OIE	Office International des Epizooties (renamed in 2003 to the World Organisation for Animal Health)
LMICs	Low- and middle-income countries
MP	Member of Parliament
NGO	Non-governmental organization
UK	United Kingdom
UN	United Nations
US	United States of America
WHO	World Health Organization
WOAH	World Organisation for Animal Health (formerly Office International des Epizooties, OIE)

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Chapter 1. Introduction

Why does so much relevant research seem to go unused in policymaking? And what can *intermediaries* — the people and organizations that move evidence between researchers and decision-makers — do to change that? Across sectors, the gap between what is known through research and what is done in policy remains a persistent and consequential problem.[1] Each year, hundreds of thousands of documents — including reports, briefings, and discussion papers — are produced in an effort to close this gap. Intermediaries such as think tanks, policy labs, science academies, and foundations play a central role in producing and circulating these documents, which are typically shared outside of academic publishing and are collectively referred to as "grey literature."[2] Yet despite its ubiquity, the creation and influence of grey literature remains relatively understudied. A growing academic literature has explored evidence-to-action questions, generating hundreds of theories, models, and frameworks, using terms such as knowledge mobilization, knowledge translation, research utilization, and implementation science.[3] This interdisciplinary scholarship offers valuable insights to improve intermediaries' efforts to communicate evidence and produce grey literature for policy audiences.[4] But three key areas remain relatively underdeveloped.

[1] Brownson et al., "Researchers and Policymakers: Travelers in Parallel Universes"; Innvaer et al., "Health Policy-Makers' Perceptions of Their Use of Evidence: A Systematic Review"; Weiss, "The Many Meanings of Research"; Bogenschneider and Corbett, *Evidence-Based Policymaking*.
[2] Lawrence, "Influence Seekers"; Global Commission on Evidence to Address Societal Challenges, "The Evidence Commission Report: A Wake-up Call and Path Forward for Decision-Makers, Evidence Intermediaries, and Impact-Oriented Evidence Producers"; Breckon and Boaz, "Evidence Intermediary Organisations: Moving beyond a Definitional Morass"; Gandara, Rippner, and Ness, "Exploring the 'How' in Policy Diffusion."
[3] Best and Holmes, "Systems Thinking, Knowledge and Action: Towards Better Models and Methods"; Davies, Powell, and Nutley, "Mobilising Knowledge to Improve UK Health Care: Learning from Other Countries and Other Sectors – a Multimethod Mapping Study"; Nilsen, "Making Sense of Implementation Theories, Models and Frameworks"; Ward, "Using Frameworks and Models to Support Knowledge Mobilization."
[4] National Academies of Sciences, Engineering, and Medicine, *Communicating Science Effectively*.

First, although mentions of communication are ubiquitous throughout evidence use literature, communication itself is rarely explicitly defined or meaningfully conceptualized, despite compelling arguments for its importance.[5] Instead, the communication factors most often discussed are primarily *technical* (e.g., avoid jargon, write brief summaries), *tactical* (e.g., pay attention to the policy cycle), or just plain *sensible* (e.g., consider your audience, have a clear message). Largely missing are studies of deeper, *rhetorical* considerations: how choices about communication's structural elements (e.g., argument, arrangement, style) might be made and marshaled to more or less persuasive ends in particular contexts.

Second, there has been very little attention paid to the processes through which intermediaries create communication materials. The people who actually do intermediary work are rarely the objects of academic study — contributing to an ironic and often-lamented "meta-gap" between scholarly research insights and actual practices of intermediaries.[6] The rare research programs that do focus on practitioners' processes contribute insights with both scholarly and practical value, for example by illuminating systemic problems in intermediaries' assumptions about their audiences and proposing corrective solutions.[7]

Third, the nature of intermediaries' choices and outputs is rarely investigated, leaving a critical gap in understanding their various impacts and improving future efforts. Instead, broad formats (e.g., reports, policy briefs, infographics, and presentations) are often treated as neutral and straightforward packaging for existing evidence, without considering the particular texts' micro-level construction and fit for purpose. Because the quality and impact of communication

[5] Cairney and Oliver, "How Should Academics Engage in Policymaking to Achieve Impact?"; Manojlovich et al., "Hiding in Plain Sight: Communication Theory in Implementation Science."; National Academies of Sciences, Engineering, and Medicine, *Communicating Science Effectively*.
[6] Besley and Dudo, *Strategic Science Communication*; Oliver, Lorenc, and Innvær, "New Directions in Evidence-Based Policy Research"; Powell, Davies, and Nutley, "Missing in Action?"
[7] e.g., Morgan et al., *Risk Communication*.

materials vary widely depending on myriad factors, more nuanced critical attention is needed to understand their varying effects.

To address these underexplored areas, this dissertation uses a multiple case study design and textual-intertextual rhetorical analysis to explore how intermediaries create texts to affect policymaking. The three cases come from the topical area of policymaking for antimicrobial resistance (AMR), whereby microbes develop the ability to resist drugs such as antibiotics that were once effective at treating them.[8] Using a grey literature report to anchor each case, I explore how intermediaries communicate about AMR evidence in policy contexts.[9] This rhetorical examination of intermediaries' processes can trace how their goals and choices affected the texts they produced. Further, examining the consequences of those choices for texts and audiences reveals ways that rhetorical processes can impact public policy debate and decision-making. By conducting rhetorical analysis of texts alongside investigation of their production and reception context, I can explore how intermediaries navigate their complex communication situations.

AMR offers an ideal and important context within which to explore broader questions about evidence and science communication for policy impact. AMR is a timely and growing issue, impacting multiple areas of society.[10] AMR means that common illnesses, injuries, and surgeries can become life-threatening without working antibiotics to treat a growing number of drug-resistant infections. Although AMR is a natural process — microbes will always adapt to new threats — this process has been accelerated by humankind's misuse and overuse of

[8] Littmann, Viens, and Silva, "The Super-Wicked Problem of Antimicrobial Resistance."
[9] Grey literature consists of documents (e.g., reports, white papers, briefs, guides, case studies) produced at all levels of government, academia, advocacy, and industry that are protected by intellectual property rights but not controlled by traditional publishers. Grey literature is shared online by its authoring organizations, largely outside of systems of scholarly indexing and cataloging. Green, "Wait! What?"; Schöpfel, "Towards a Prague Definition of Grey Literature"; Yoshida et al., "Beyond Academia"; Green, "The Chasm between the Scholarly Record and Grey Literature."
[10] Murray et al., "Global Burden of Bacterial Antimicrobial Resistance in 2019"; Naghavi et al., "Global Burden of Bacterial Antimicrobial Resistance 1990–2021."

antimicrobials. Despite calls for more social science and humanities research on the subject,[11] AMR remains relatively understudied from a rhetorical perspective — providing an opportunity for fresh insights into both AMR communication and rhetoric. By focusing on a single subject area, I can more feasibly achieve the depth of contextual inquiry and description required for this dissertation's rhetoric-focused case studies.

Scholarship on the intersections of evidence, communication, and policy emerges from many different perspectives. In the remainder of this chapter, I survey extant research and outline several relevant themes. This interdisciplinary overview suggests that a great deal is already known about efforts to communicate evidence for policymakers. However, I argue that integrating perspectives from rhetoric can offer important complementary insights to better understand the communication of evidence in policy contexts. Next, I enumerate the research questions that underlie this dissertation. I discuss this project's interdisciplinary orientation, then close with a preview of the chapters that follow.

Literature Review

The appropriate role for specialized, expert knowledge in public deliberation has been debated since the earliest days of democracy.[12] However, global interest in strengthening ties between science and policy intensified following World War II, and has skyrocketed over the last several decades as societies increasingly grapple with how to best leverage scientific knowledge to improve public policymaking outcomes.[13]

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[11] Lu, Sheldenkar, and Lwin, "A Decade of Antimicrobial Resistance Research in Social Science Fields"; Baker, "Challenges and Opportunities in Antimicrobial Resistance Research"; Helliwell, Raman, and Morris, "Environmental Imaginaries and the Environmental Sciences of Antimicrobial Resistance."
[12] Brown, *Science in Democracy*; Plato, *Gorgias*.
[13] Gascoigne et al., *Communicating Science*; Head, "Toward More 'Evidence-Informed' Policy Making?"; Nutley, Walter, and Davies, *Using Evidence: How Research Can Inform Public Services*; Parkhurst, *The Politics of Evidence*; Smith et al., *The Impact Agenda*.

Across numerous academic disciplines and practice communities, many are deeply and increasingly concerned with a perceived gap between what we know through research and what policy decisions are made. Within the broad problem space of how to improve and accelerate the use of scientific evidence in public policymaking, this dissertation focuses on communication problems and solutions. While communication is just one of many barriers and facilitators to success, how intermediaries choose to communicate is also one of the few factors consistently within their control — in contrast to things like having a favorable policy environment or ample resources.[14] Although intermediaries cannot control policymakers' reception of their messages, they can choose what to put out into their complex social environments. Yet, too often, intermediaries unintentionally use less effective or even counterproductive approaches to communicate research — risking wasted time and potentially harmful misunderstandings.[15]

This project starts from two central, normative premises: first, that improving the use of evidence in policy is possible and desirable to produce better social outcomes; second, that improving communication is one important means to achieve that goal. The sprawling academic literature on evidence-to-policy communication has produced many critiques and fundamental problematizations of these central concepts — questioning whether a "gap" between evidence and policy really exists, what counts as evidence, what counts as evidence use, how much evidence matters in policy environments with decisions based on partisan ideology and emotions, and who decides.[16] I take the stance that science — defined broadly as the systematic,

[14] Oliver, Lorenc, and Innvær, "New Directions in Evidence-Based Policy Research."
[15] Bales, "The Trouble with Issues"; Ceccarelli, "Neither Confusing Cacophony Nor Culinary Complements"; Kendall-Taylor, Erard, and Haydon, "The Use of Metaphor as a Science Communication Tool"; Shonkoff and Bales, "Science Does Not Speak for Itself."
[16] Greenhalgh and Russell, "Evidence-Based Policymaking"; Hammersley, *The Myth of Research-Based Policy & Practice*; Lewis, "Evidence Based Policy"; Murphy, "Reconsidering the Role of Scientific Research in Anti-Toxics Rhetoric through Perspective by Incongruity"; Neville-Shepard, "Post-Presumption Argumentation and the Post-Truth World"; Oliver, Lorenc, and Innvær, "New Directions in Evidence-Based Policy Research."

cumulative pursuit of knowledge about the natural world — should be considered an important and valuable input in policy decisions. Further, I believe that robust consideration of available evidence can help governments better choose between options in ways that are more likely to produce better outcomes. Rather than focusing on arguing for either of these starting premises, I follow many scholars and practitioners in presuming that better communication of evidence can contribute to better consideration of evidence in policy, which is an important path toward improved social outcomes.[17] If one's goal is to improve policy by improving intermediaries' communication of evidence to policymakers, it is helpful to start by surveying existing ameliorative efforts.

Existing Communication Advice for Intermediaries

Communication advice for those seeking to share evidence in policy settings tends to come out of two main camps. The first camp consists of practitioner-focused science communication trainers and researchers in applied areas like marketing, public relations, and strategic communication. There has been an explosion of training and advice aimed at helping would-be intermediaries develop better communication skills. While much of this guidance is targeted towards scientists themselves,[18] there are also myriad training opportunities and resources tailored for those working at the interface of science and policy.[19] Often delivered via stand-alone, one-time workshops, this practitioner-focused advice tends to focus on specific tactics and skills to better communicate research evidence — for example, how to design an

[17] Gluckman, "Policy"; Parkhurst, *The Politics of Evidence*; Weiss, "The Many Meanings of Research"; Jagannathan et al., "A Research Agenda for the Science of Actionable Knowledge."
[18] e.g., Alda, *If I Understood You, Would I Have This Look on My Face?*; Besley and Dudo, *Strategic Science Communication*; Olson, *Don't Be Such a Scientist*.
[19] e.g., "Training Workshop"; "Knowledge into Action"; "Programs"; "Knowledge Translation"; "Knowledge Broker Mentoring Program"; "Certificate in Knowledge Mobilization"; "Knowledge Translation 3 – Knowledge Brokering"; "Knowledge Translation Training and Resources."

appealing slideshow, tell a compelling story, or pen an op-ed. Overall, such guidance emphasizesthe technical craft of communicating scientific knowledge, including how to best serve the needs of policymaker audiences — such as avoiding jargon, having a clear message, and being concise.

The second camp are academic communities, which focus — explicitly or implicitly — on developing the "science of science communication."[20] This body of literature seeks to describe, explain, and predict various aspects of communicating research for policy impacts. The scholars in these areas have produced a vast number of theories, models, and frameworks, including extensive lists of barriers and facilitators known to help or hinder knowledge mobilization.[21] While this camp encompasses many different methodologies and intellectual traditions, all aim to contribute generalizable knowledge about "what works" for intermediaries under various circumstances.

Both camps contribute valuable advice and resources for those seeking to improve communication about evidence for policy impacts, but each has some key limitations. For more tactically-focused trainers, evaluations have highlighted that they tend toward a myopic focus on specific skills and formats without offering a deeper discussion of communication goals.[22] Stripped of context, the teaching in these workshops tends to err toward generalities and has been critiqued as banal common sense or impractically vague (e.g., offering advice such as "know your audience" or "have a clear message" without guidance on how to implement these insights). Those in academic communities who encounter such training experience an ironic meta-gap

[20] Jamieson, Kahan, and Scheufele, *The Oxford Handbook of the Science of Science Communication*; Jamieson, Kahan, and Scheufele; National Academies of Sciences, Engineering, and Medicine, *Communicating Science Effectively*.
[21] Ashcraft, Quinn, and Brownson, "Strategies for Effective Dissemination of Research to United States Policymakers"; Esmail et al., "A Scoping Review of Full-Spectrum Knowledge Translation Theories, Models, and Frameworks"; Oliver et al., "A Systematic Review of Barriers to and Facilitators of the Use of Evidence by Policymakers"; Strifler et al., "Scoping Review Identifies Significant Number of Knowledge Translation Theories, Models, and Frameworks with Limited Use."
[22] Dudo, Besley, and Yuan, "Science Communication Training in North America."

between the findings gleaned through their own research and practitioners' apparent lack of awareness of or interest in what they have discovered and codified.[23]

While much of the academic literature could have practical implications for intermediaries, it is often conducted primarily for academic interest and shared narrowly within specific and often small academic disciplinary communities. The resulting theories, models, and frameworks are critiqued as not particularly useful or informative in practice settings, either for being too complex and esoteric, too abstract, or overly simplistic and reductionist.[24] Additionally, both camps frequently leave the concepts of policy, policymakers, and decision-making largely undefined.[25] There is a need for more practice-focused research that engages with existing scholarly insights, while generating the kinds of knowledge known to be useful in practice.

A rhetorical perspective can complement both camps, by generating applicable advice to practitioners while enriching scholarly conversations on evidence-to-policy communication. Defined by Aristotle in ancient Greece, "rhetoric is an ability, in each particular case, to see the available means of persuasion."[26] Rhetoric can be understood in two main ways, as both the "academic field that analyzes suasion as well as the suasion itself that is being studied."[27] While countless definitions and nuances exist among different foci of rhetorical scholarship, rhetoricians generally share an interest in the effects of symbols on people, critically analyzing and dissecting the design and language of texts and other persuasive materials. Whereas existing

[23] Doig et al., "Survey of Academic Staff and Higher Degree Research Students in a University School of Health and Rehabilitation Sciences about Practices, Attitudes, Knowledge and Confidence in Knowledge Translation and Communicating Impact"; Ward, "Why, Whose, What and How?"
[24] e.g., Oxman, Fretheim, and Flottorp, "The OFF Theory of Research Utilization."
[25] Blum and Pattyn, "How Are Evidence and Policy Conceptualised, and How Do They Connect?"; Fafard and Hoffman, "Rethinking Knowledge Translation for Public Health Policy."
[26] Aristotle, *On Rhetoric*, 14.
[27] Ceccarelli, "Language and Science from a Rhetorical Perspective," 9.

advice-givers tend to see communication as either craft or science, rhetoric helpfully broadens and complicates the conversation by appreciating other types of knowledge, or "intellectual virtues."[28] Rhetoric adds the concept of practical wisdom (*phronēsis*) — alongside but differentiated from ideas of technical craft (*technē*) and scientific knowledge (*epistēmē*) — and emphasizes the importance of adapting communication to suit each particular situation. Rhetorical critic Barry Brummett argues that the ultimate goal of rhetorical theory and criticism is pedagogical — "to teach people how to experience their rhetorical environments more richly" — and that rhetorical theory should be viewed as a heuristic device to learn about and guide symbolic action.[29] The more rhetorical theories in someone's repertoire and the more practiced they are at recognizing the appropriate use of said theories, the more choices they have to order and shape their rhetorical world.

Others have noted the relevance of rhetoric to intermediaries working at the interfaces of evidence and policy. For example, medical researchers Trish Greenhalgh and Jill Russell have argued that evidence-based policy's central, "what should we do?" questions are addressed most effectively through processes of rhetorical argumentation, advocating for more attention to argumentation theories in studies of evidence-based policy.[30] However, relatively few studies have answered their call. Rhetorician Jeanne Fahnestock has similarly argued for the benefits of adding a rhetorical perspective to the "science of science communication" research agenda, emphasizing their similarities and lamenting the current lack of engagement between science communication and rhetoric scholars.[31] In this dissertation, I will show how integrating ideas

[28] Aristotle, *The Nicomachean Ethics of Aristotle: A New Translation*.
[29] Brummett, "Rhetorical Theory as Heuristic and Moral," 103.
[30] Greenhalgh and Russell, "Evidence-Based Policymaking."
[31] Fahnestock, "Rhetorical Citizenship and the Science of Science Communication."

from rhetoric can enrich current advice and research regarding intermediaries' policy-focused evidence communication and open up new, interdisciplinary insights.

Evidence for Practice

In what sort of research project would it be most useful to take this kind of rhetorical perspective? It is tempting for academics to see more knowledge as the solution to every problem (more research is always needed!). Yet, academic research *on* the nature of practice and expertise shows us that the reality of generating useful evidence for practice is more complex.

Work from practice and professional studies, as well as studies of expertise, illustrates that practical skills are honed not only through knowing, but also through doing and reflecting. One influential contributor to this area is philosopher and urban planning scholar Donald Schön, who explored the relationships between academic knowledge and practical competence by observing and theorizing how practitioners develop expertise in professions such as urban design, music, and architecture.[32] Schön argues that our idealized model of "technical rationality" — where professionals learn and apply evidence from research to practice — is not sufficient to help professionals in practical situations characterized by inherent complexity, uncertainty, instability, uniqueness, and value conflicts. Instead, Schön proposed that professional skill is based on learning to better understand and structure problems, leverage rich repertoires, and reflect during and after action. Similarly, economic geographer Bent Flyvbjerg draws on expertise studies to argue social science is best positioned to contribute examples that help its consumers build practical wisdom (*phronesis)* through rich, contextually situated case studies.[33] Other studies of professional expertise support this emphasis on the importance of

[32] Schön, *The Reflective Practitioner: How Professionals Think in Action*.
[33] Flyvbjerg, *Making Social Science Matter: Why Social Inquiry Fails and How It Can Succeed Again*.

repertoires and reflection for practical skill, including observations of process expertise in written composition.[34]

If we approach intermediary work and communication as a type of process expertise, then they too need a repertoire of rich examples to help them hone practical wisdom. However, the evidence-to-policy literature lacks rich case studies at the granular detail required for such learning. While there are certainly valuable case studies, they tend to be autoethnographic and focus on authors' personal experiences at meso- and macro-levels,[35] rather than closely analyzing the micro-level texts created.

A rhetorical perspective is very helpful to navigate the need for generalizable heuristics while maintaining an appreciation of the need for particular adaptation. The rhetorical canon of invention offers many useful resources and examples of how rules of thumb can be applied and adapted to particular circumstances.[36] Additionally, rhetoric's micro-level analysis of communication construction provides critical tools to appraise the quality of materials produced, including their suitability to particular contexts.

Should Intermediaries Inform or Persuade?

Another way a rhetorical perspective can enrich what we know and do for evidence-to-policy communication is in how it helps relieve a central tension about whether the ultimate goal is to inform or persuade. Those communicating on behalf of science face an interesting dilemma in political contexts: the idea that science's value to policy stems — at least in part — from its separation from politics. The use of science in policy raises dual concerns of "politicization of

[34] Bereiter and Scardamalia, *Surpassing Ourselves*.
[35] e.g., Weakley and Waite, "Academic Knowledge Brokering in Local Policy Spaces."
[36] One of the five classical canons of rhetoric, invention concerns finding something to say, and encompasses strategic acts that provide the rhetor with direction, multiple ideas, subject matter, arguments, insights or probable judgments, and understanding of the rhetorical situation. See Atwill and Lauer, *Perspectives on Rhetorical Invention*.

science" and "scientization of politics."[37] Within policy contexts, evidence advocates are often concerned that political interests might drive misuse or manipulation of evidence, violating principles of scientific best practice.[38] However, critical policy scholars and rhetoricians point out that appeals to evidence-based policy can harmfully depoliticize political debates, by marginalizing policy-relevant topics like societal values.[39]

Those communicating about scientific, expert knowledge are judged on seemingly competing grounds: both the academic independence of their technocratic insights and the political usability of their advice.[40] In many scientific communication situations, one must "persuade without seeming to persuade."[41] Unlike other communication areas such as political advocacy, advertising, or public relations, much of science's claim to why it should be privileged as a way of knowing is based on ideals of its disinterestedness and objectivity. Many worry that if those communicating about science appear too *intentionally* persuasive, they risk undermining their credibility and scientific ethos — becoming just one of many vested interest groups clamoring for policy influence.[42]

A rhetorical perspective helps us navigate this tension by showing how wise persuasive choices need not — and in fact, cannot — be separated from objective expertise or evidence. In rhetorician Johanna Hartelius' case-based exploration of the rhetoric of expertise, she skillfully argues that a rhetorical perspective dissolves the long-standing debate about whether expertise should be understood as "autonomous" (something that individuals possess) or "attributed" (something that must be socially bestowed), by demonstrating how both are simultaneously

[37] Weingart, "Scientific Expertise and Political Accountability."
[38] Parkhurst, *The Politics of Evidence*.
[39] Farrell and and Goodnight, "Accidental Rhetoric."
[40] Bandola-Gill, "The Legitimacy of Experts in Policy."
[41] Myers, "The Social Construction of Two Biologists' Proposals," 220.
[42] Blastland et al., "Five Rules for Evidence Communication."

true.[43] The field of rhetoric provides conceptual resources with sufficient nuance to understand why any endeavor to communicate about scientific evidence for policy use necessarily involves *both* informing and persuading.

From a rhetorical perspective, even unconscious choices are understood as moves that have persuasive impact. A rhetorician assumes that "the language we use, whether we are aware of it or not, *always* seeks to persuade others to share our perspectives, embrace our values, and support our ends.[44] In other words, communicating with a plain, frank style as an "honest broker" who reports "just the facts" is itself a rhetorical choice. An orientation to argumentation and persuasion enables rhetoricians to investigate and judge which choices are better or worse, given a rhetor's particular situation and goals.[45] Surveys of science communicators, however, find that many "start with a limited perspective on the strategic choices they have available when it comes to tactics, objectives, and goals."[46] Ultimately, a more expansive understanding can enrich the repertoire of cases and available strategies for practitioners to use, and for academics to theorize about.

Illuminating Inventional Processes

While a rhetorical perspective has much to contribute to the study and practice of communication for policy impact, case studies including practitioners' perspectives also stand to enrich current rhetorical literature. As an interpretive and critical area of humanities research, it is traditionally rare for rhetoricians to engage directly with the "rhetors" they study about their

[43] Hartelius, *The Rhetoric of Expertise*.
[44] Ceccarelli, "Language and Science from a Rhetorical Perspective," 10.
[45] In rhetorical scholarship, a "rhetor" is the person performing the rhetorical act of moving or persuading an audience, via symbolic action, e.g., writing, speaking.
[46] Dudo, Besley, and Yuan, "Science Communication Training in North America."

intentions and goals through qualitative research methods like interviews or other situated field methods.[47]

In rare studies where rhetoricians have both analyzed texts and sought creators' perspectives, the results are informative.[48] Rhetorician Greg Myers' case study of two biologists' grant writing examines successive versions of their proposals from three vantage points: the writers, the readers, and his own as the rhetorical critic.[49] Combining all three readings helps Myers identify specific rhetorical maneuvers the authors deploy to adapt their personae and relations to the scientific literature, and illustrates how scientific texts are the products of communities of researchers. Communication scholar Jeffrey Bennett studies diabetes in popular culture, and includes interviews with health campaign creators alongside audience reception and his own rhetorical criticism to gain deeper insights into the public character of the disease and demonstrate ways its management is not only clinical but also cultural.[50] Considering authors' stated intent need not privilege them as holding the only or correct interpretation of a text — the critic and audiences can and do create alternative meanings. But failing to consider this information can be limiting, and is unnecessary if evidence about the production context of a text can be easily gathered.

For the ameliorative aim of improving communication, learning more about intermediaries' processes is an important — but often neglected — piece of the puzzle. For example, in a case study of influential climate science advocate James Hansen, rhetorician Richard Besel meticulously uncovers clever ways Hansen appears to have adapted his rhetoric over three separate testimonies to Congress.[51] But what would Hansen say about his experience

[47] McKinnon et al., *Text + Field*.
[48] e.g., Silvestro, "Changing the Conversation."
[49] Myers, "The Social Construction of Two Biologists' Proposals."
[50] Bennett, *Managing Diabetes*.
[51] Besel, "Accommodating Climate Change Science."

if Besel had asked him? Often, rhetoricians do not explore whether successful or unsuccessful rhetorical moves were intended or not. And, to some degree, we are still able to learn from successful and unsuccessful rhetorical strategies, regardless of whether the moves were intended by the rhetors. When seeking to influence and improve practice, however, it is both useful and important to understand more about how intermediaries consciously assess their situations and make rhetorical choices to match.

Research Questions

My central research focus is exploring means for improving the communication of evidence for policymaking. The primary object of inquiry in this dissertation is the *process* of intermediaries creating and using grey literature reports as persuasive texts to influence policy based on evidence. To investigate these processes from a rhetorical perspective, I will focus my analysis on four interrelated questions focused on AMR-related reports for policy audiences.

1) ***Production Context: How do intermediaries navigate rhetorical choices when creating their texts?*** Recognizing that it is impossible for individuals or teams to consciously comprehend all contextual elements in a given situation, what strategies do they use to identify and address their rhetorical exigence, audiences, and constraints? Although some rhetoric and communication scholars have investigated invention processes in scientific settings,[52] I will explore rhetorical invention in the context of science communication for *policy* impact, where rhetoric must move from technical to public spheres.

[52] e.g., Atwill and Lauer, *Perspectives on Rhetorical Invention*; Bereiter and Scardamalia, *The Psychology of Written Composition*; Prelli, *A Rhetoric of Science*; Rowan and Pyle, "Heuristics for Communicating Science, Risk, and Crisis: Encouraging Guided Inquiry in Challenging Rhetorical Situations — the CAUSE Model of Strategic Crisis Communication."

2) ***Textual Analysis: What significant rhetorical moves exist within the texts intermediaries produce?*** Considering the micro-level text of the written reports in light of their production and reception, I will use rhetorical theory to identify which rhetorical moves seem salient and to explicate their significance.

3) ***Reception: What effects do these rhetorical moves have on readers of the texts?*** I will explore how rhetorical moves in the report texts connect to authors' goals, readers' responses, and subsequent policy actions.

4) ***Learning: What opportunities exist to learn from and improve intermediaries' rhetorical processes when creating policy reports?*** I will compare lessons across cases and leverage existing literature to analyze what conceptual tools or theories are most relevant to learn from these cases and to theorize promising strategies and insights that could be applied in similar situations.

These questions will serve as a project through-line to help guide my analysis and connect each chapter to a common set of critical concerns.

Key Audiences and Terminology

This dissertation is addressed to an interdisciplinary academic audience, including scholars working in rhetoric, evidence use, writing and composition studies, science communication, studies of expertise and experience, technical communication, and public policy process studies. Beyond academia, this project will also offer actionable insights for practitioners.[53]

[53] Of course, most practitioners are unlikely to read a PhD dissertation. I have still included discussions of practical implications and applications of findings, which could be adapted into more practice-friendly formats in the future.

Speaking to different audiences, however, complicates terminology choices. Throughout this dissertation, I have selected "intermediary" as my primary term for the people or organizations moving evidence into practice. Yet, scholarship in this broad area frequently deploys different words to label similar concepts — with terms such as science communicator, knowledge broker, boundary spanner, knowledge translator, policy entrepreneurs, think tank, policy lab, clearinghouse, and knowledge mobilizer.[54] Scholars' preferred terms can vary depending on a mix of factors, including their nationalities, research topics and sectors, or academic backgrounds. For example, knowledge mobilization is often used in the UK, Australia and Canada, whereas US contexts more commonly use the term intermediaries. One review found the health sectors often use "broker" as a key term, whereas "boundary spanner" was more common in the environmental sector.[55] In political sciences, public policy process theories frequently use the term policy entrepreneur.[56] Further, different academic areas may imbue specific terms with particular nuances and important differences,[57] while others propose such terms should be largely seen as synonyms.[58] Overall, I argue variation in these terms is not a problem — as long as terms are clearly defined, and we do not presume shared meaning based solely on term choice. Throughout the dissertation, I will define key terms as they are used in the chapters. (See also Appendix A for an annotated glossary.)

[54] Neal, Neal, and Brutzman, "Defining Brokers, Intermediaries, and Boundary Spanners"; Breckon and Boaz, "Evidence Intermediary Organisations: Moving beyond a Definitional Morass"; MacKillop, Quarmby, and Downe, "Does Knowledge Brokering Facilitate Evidence-Based Policy?"; MacKillop et al., "Making Sense of Knowledge-Brokering Organisations"; Graham et al., "Lost in Knowledge Translation: Time for a Map?"
[55] Neal, Neal, and Brutzman, "Defining Brokers, Intermediaries, and Boundary Spanners."
[56] e.g., Anderson, DeLeo, and Taylor, "Policy Entrepreneurs, Legislators, and Agenda Setting"; Arnold et al., "Finding, Distinguishing, and Understanding Overlooked Policy Entrepreneurs"; Kingdon, *Agendas, Alternatives, and Public Policies*; Zahariadis et al., *A Modern Guide to the Multiple Streams Framework*.
[57] e.g., Barwick et al., "Knowledge Translation and Strategic Communications: Unpacking Differences and Similarities for Scholarly and Research Communications"; Greenhalgh and Wieringa, "Is It Time to Drop the 'Knowledge Translation' Metaphor? A Critical Literature Review."
[58] e.g., Shaxson et al., "Expanding Our Understanding of K*(Kt, KE, KTT, KMb, KB, KM, Etc.)."

Structure of the Dissertation

This dissertation has three main analysis chapters. To set the stage for subsequent analysis, Chapter 2 will detail the textual-intertextual research approach used, describe how the case studies were selected and conducted, and provide key details on each case, including background on the three AMR reports that will be the focus of the dissertation as well as the interview process I used for gathering information from report authors and audiences about production context and reception. The next three chapters will focus on the production contexts, report texts, and evidence of audience reception in turn. Chapter 3 will focus on the report authors and their production processes, exploring rhetorical strategies intermediaries can use to build credibility. This analysis will highlight how intermediaries can successfully cultivate and convey a unique *ethos* of interactional expertise, which is well-suited to their rhetorical situation. Next, Chapter 4 will analyze how the reports rhetorically advance policy agenda-setting goals, using concepts from both rhetorical theory and a public policy process theory, Multiple Streams Framework. Analysis across the cases will illustrate how integrating insights from rhetorical theories with public policy process theories, such as Multiple Streams Framework, can help us better identify and explain promising textual strategies to argue for a given issue's place on a policy agenda. Chapter 5 will then explore each report's reception and use in the years following publication. Analysis will demonstrate how existing theories of rhetorical circulation, strategic recomposition, and extended delivery illuminate the case studies. Drawing on observations about reception of the cases, I will propose three practical heuristics for report authors to proactively design their texts so as to best equip subsequent rhetors to argue on a given policy issue. Finally, Chapter 6 will revisit this study's research questions and draw conclusions about how the preceding chapters relate to the questions and each other. I will argue that analysis of

intermediaries' AMR reports can address this study's core research questions by exploring rhetorical strategies from multiple perspectives of the author, rhetorical critic, and audience. A better understanding of the rhetorical processes of intermediaries can be used to help guide more skillful practice and more practice-relevant scholarship.

Chapter 2. Research Approach and Texts

As a humanities discipline, rhetoric has traditionally resisted rigid, step-by-step methods for inquiry. Instead, rhetoricians cultivate a refined critical faculty, drawing on interconnected concepts and interpretive lexicons that blur the boundary between theory and method to analyze texts.[59] Yet, as rhetorical inquiry has expanded beyond speeches and literature to examine persuasion in a broader array of formats and contexts, rhetorical scholars have increasingly incorporated a wider range of methods for study design, data collection, and analysis.[60]

Especially for those of us pursuing interdisciplinary research addressed to various audiences, I believe a clear and transparent discussion of methodology and methods enhances the value and trustworthiness of findings for readers outside the field of rhetorical scholarship.[61] Providing and adhering to relevant reporting checklists and guidelines for qualitative research can contribute to such transparency.[62] For this dissertation, I used three reporting tools: the Standards for Qualitative Research Reporting, the TRIPLE C principles for case studies, and the Big Q Qualitative Reporting Guidelines. (See Appendix B.) In what follows, I outline the textual-intertextual approach to rhetorical inquiry that undergirds this dissertation's findings. I detail my steps for the multiple case study design and describe key details of each case, before concluding with a discussion of this research approach's strengths and limitations.

[59] Brummett, "Rhetorical Theory as Heuristic and Moral"; Ceccarelli, "A Rhetoric of Interdisciplinary Scientific Discourse"; Johnson and Xenos, "Building Better Bridges"; Gries, *Still Life with Rhetoric*.
[60] Condit and Bates, "Rhetorical Methods of Applied Communication Scholarship"; Johnson et al., "'Keep Talking, I Keep Changing My Mind'"; McKerrow, "Text + Field"; Melonçon et al., *Rhetoric of Health and Medicine as/Is*.
[61] The terms method and methodology are often used interchangeably, but can entail different meanings. In this dissertation, I follow Spinuzzi in defining a method as "a way of investigating phenomena" and methodology as "the theory, philosophy, heuristics, aims and values that underlie, motivate and guide the method." *Tracing Genres through Organizations*, 7.
[62] Busetto, Wick, and Gumbinger, "How to Use and Assess Qualitative Research Methods."

Textual-Intertextual Rhetorical Analysis

This dissertation takes a textual-intertextual approach to rhetorical analysis, in which a reading of a central *anchor text* is refracted through its contemporary reception and production context. Developed by Leah Ceccarelli, this approach embraces the tradition of rhetorical critic Michael Leff's close reading, while addressing some of its limitations.[63] In close reading, a rhetorical critic works from evidence within the text to "make inferences about what the work is designed to do, how it is designed to do it, and how well that design functions to structure and transmit meanings within the realm of public experience."[64] This rhetorical tradition holds that close examination of a text can uncover details about its meaning and function, ultimately contributing to a broader understanding of how symbols influence people.[65] Close reading in rhetorical criticism can be broadly defined as "the mindful, disciplined reading of an object with a view to deeper understanding of its meanings."[66] However, as an approach to rhetorical criticism, close reading has been criticized for focusing too narrowly on a text's internal construction, while neglecting its context and observable external impacts.[67] One problem arises when close readers assume or over-privilege the intentional rhetorical choices of a text's author for an implied audience, which can lead critics to disregard contextual influences, real author processes, and actual audience responses. Rhetorical critics doing close readings also run the risk of becoming too convinced of their initial impressions, potentially forcing findings to fit their first hypothesis.[68]

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[63] Ceccarelli, *Shaping Science with Rhetoric: The Cases of Dobzhansky, Schrödinger, and Wilson*; Leff, "Things Made by Words."
[64] Leff and Sachs, "Words the Most Like Things: Iconicity and the Rhetorical Text," 256.
[65] Richards, *Practical Criticism, a Study of Literary Judgment*.
[66] Brummett, *Techniques of Close Reading*, 2.
[67] Gaonkar, "The Idea of Rhetoric in the Rhetoric of Science."
[68] Ceccarelli, "A Rhetoric of Interdisciplinary Inspirational Discourse."

As they have been conducted to date, textual-intertextual rhetorical reading approaches aim to mitigate these limitations of close reading by additionally analyzing multiple audiences' responses to the text via secondary sources such as book reviews, interviews, newspaper articles, and academic papers referencing the text.[69] By considering a primary text alongside these "artifacts of reception," a critic can identify not only the arguments present in the text, but also to trace how various audiences engaged with or resisted those arguments in context.[70]

This dissertation extends the textual-intertextual analysis approach to also include artifacts of *production* — i.e., sources that can illuminate how authors' contexts, choices, and processes (both conscious and unconscious) interacted with the texts they created. Artifacts of production could include interviews with authors, draft versions of the anchor text, presentations about the anchor text's creation, and anything else that offers insight into how the anchor text was made. I follow writing researcher Charles Bazerman in defining intertextuality as "the explicit and implicit relations that a text or utterance has to prior, contemporary and potential future texts."[71] So, by incorporating evidence about how texts were produced alongside evidence of how they were received, a textual-intertextual analysis can also explore how antecedents, inventional processes, and intentional/unintentional choices informed text construction. Textual-intertextual analysis has already proven fruitful for exploring how audiences do and do not accept invitations offered by texts, including in rhetorical contexts involving health, science, and public policy discourses.[72] This dissertation leverages the approach to also consider how authors' goals and intentions did or did not manifest within the

[69] e.g., Austin and Bommarito, "The Persistence of 'Consilience'"; Nørholm Just and Berg, "Entropa: Rhetoric of Parody and Provocation"; Andersen, "'Well, That's Just My Opinion'"; Hornmoen et al., "Media Narratives, Agonistic Deliberation, and Skam"; Lynch, "Bioethics and Brave New World."
[70] Archer, "Understanding the Rhetorical Dynamics of Expertise Amid a Manufactured Controversy," 17.
[71] "Intertextuality: How Texts Rely on Other Texts," 86.
[72] Kolodziejski, "Harms of Hedging in Scientific Discourse"; Lynch, "Bioethics and Brave New World."

texts they created. A combined reading of text, intertextual evidence of reception, and materials capturing production creates a triple redundancy that helps refine and strengthen a rhetorical critic's inductive analysis process, because any initial hypothesis formed from reading the text is revised or rejected if not supported by intertextual evidence from production and reception.[73]

Multiple Case Study Design

Qualitative case study research enables in-depth exploration of complex phenomena in real-world contexts. In this dissertation, I define the method of case study as an empirical, holistic description and analysis of a bounded phenomenon within its circumstances.[74] Case studies are widely used across disciplines,[75] and case study research represents a staple approach in all of my academic focus areas — i.e., rhetoric, knowledge mobilization, public policy, and technical communication.[76] Conducting a qualitative case study can afford many benefits, providing deep contextual analysis, accommodating multiple perspectives, and generating heuristic insights.[77] Given these advantages, a case study design is well suited to addressing my dissertation's research aims.

Building on the strengths of single case studies, employing a *multiple* case study approach enables meaningful comparisons both within and across cases.[78] Sometimes called a multicase, comparative, collective, or compound case study design, this approach of conducting several concurrent case studies can help develop more durable, transferable insights beyond a

[73] Ceccarelli, *Shaping Science with Rhetoric: The Cases of Dobzhansky, Schrödinger, and Wilson*; Leff, "Lincoln at Cooper Union."
[74] Schwandt and Gates, "Case Study Methodology."
[75] E.g., sociology, anthropology, business management studies, health and health services Hyett, Kenny, and Dickson-Swift, "Methodology or Method?"
[76] Moriarty et al., "Durable Research, Portable Findings."
[77] Flyvbjerg, "Five Misunderstandings About Case-Study Research"; Flyvbjerg, *Making Social Science Matter: Why Social Inquiry Fails and How It Can Succeed Again*.
[78] Multiple case study or "multicase methods" are defined here as the intentional analysis of two or more complete single case reports. Stake, *Multiple Case Study Analysis*.

single case.[79] Broadly, I follow the guidance of qualitative case study methodologists Robert Stake and Sharan Merriam, whose respective constructivist and interpretivist stances align well with my philosophical orientation and research goals for this project.[80] I also incorporate case study design considerations from rhetoric and technical communication scholarship, including their attention to the complex interplay between text and context.[81] In this study, I define context as the evolving set of historical, situational, and audience factors that shape and constrain a rhetorical act in a given moment.

This project was determined to be exempt from Institutional Ethics Board review by the University of Washington's Human Subjects Division because all interview participants were consenting adults, speaking about their professional work, and the study posed no more than minimal risk. The next sections outline my case selection, data collection, and analysis process, and the strengths and limitations of my approach.

Case Selection

I selected the cases using a four-step process. First, I generated a set of preliminary criteria for the types of cases I most wanted to explore, based on existing literature and refined with input from my supervisory committee. My preliminary selection criteria were texts that were publicly available in English, with a substantial focus on AMR-related policy recommendations targeting national and international policymakers, published between 2014 and 2019, by groups or organizations operating outside of governments (i.e., not produced within

[79] Moriarty et al., "Durable Research, Portable Findings."
[80] Merriam, *Qualitative Research and Case Study Applications in Education*; Stake, *The Art of Case Study Research*.
[81] Stake, *Multiple Case Study Analysis*; Merriam, *Qualitative Research and Case Study Applications in Education*; Moriarty et al., "Durable Research, Portable Findings"; Hyett, Kenny, and Dickson-Swift, "Methodology or Method?"; Gross, "The Roles of Rhetoric in the Public Understanding of Science."

governments).[82] Second, I generated a long-list of candidate cases by searching for reports (i.e., anchor texts) that fit the preliminary inclusion criteria, using grey literature search methods with assistance from the University of Washington's subject matter librarian team. (See Appendix C.) I do not claim to have systematically captured all candidate reports in this list; rather I aimed to ensure I was selecting cases from a reasonably comprehensive understanding of possible options. Third, I selected an initial shortlist of three top-choice cases. I followed Stake's advice to construct a set of cases that collectively provide the best opportunity to learn, considering the variety, relevance and accessibility of cases in the set.[83] For example, I purposely selected cases with authors and target audiences in different countries to learn from a wider variety of settings, because issues of persuasion and science communication can vary across national and international contexts.[84] This selection approach prioritizes identifying optimal cases for exploring the phenomenon of interest rather than making generalizations.[85] Fourth, I sent an initial inquiry to one key author for each of my shortlisted cases, to gauge if they would be willing and able to give an interview.[86] Fortunately, they all agreed. This initial check followed Stake's advice to prioritize cases that offer the opportunity to learn a lot, which requires that information about the cases be accessible to the researcher.[87] This sampling strategy led to the

[82] The timeframe was selected to enable observation of report reception and policy actions at least five years following publication, but to also be recent enough to speak with living authors, who could reasonably remember working on the reports. I chose to focus on "outside-in" reports authored by those outside the government for scoping purposes. Future research could explore cases of internal government reporting.
[83] Stake, *Multiple Case Study Analysis*, 26.
[84] Ledingham et al., "Antibiotic Resistance: Using a Cultural Contexts of Health Approach to Address a Global Health Challenge."
[85] Stake, *The Art of Case Study Research*; Bernard, Wutich, and Ryan, "Research Design I: Sampling"; Curtis et al., "Approaches to Sampling and Case Selection in Qualitative Research: Examples in the Geography of Health"; Patton, *Qualitative Research & Evaluation Methods*.
[86] I took this step because some report authors are barred from discussing writing processes based on non-disclosure agreements. Since accessing author perspectives via interviews was a goal of the study, I would not proceed with a case unless I could speak with authors of its anchor text.
[87] Stake, *Multiple Case Study Analysis*, 25.

final selection of three cases, which reflect a range of author, report, and audience factors. (See Table 1.)

I stopped at three cases for both methodological and practical reasons: having three cases provides sufficient "information power" for my relatively narrow and specific study aims while keeping the project scope manageable within the constraints of a doctoral project.[88] By not overextending the reach of the study, I aim to maintain a focus on the dynamics of the particular cases; and by extending the study to more than a single text, I hope to show how those dynamics might have a broader significance for the study of rhetoric in public policy contexts.

Data Collection, Generation, and Analysis

As with case study selection, I adopted a purposeful sampling approach to data collection and generation within the case studies, meaning that documents and interview participants were selected for their direct relevance to this study's research questions. For each case, I created a database of the collected production and reception texts using Zotero (version 7.0.3) to capture included texts' metadata (e.g., source, publishing date, date added to database) and organize the texts using sub-folders and tags.[89]

I took a grounded theory-inspired approach to collect and analyze concurrently, "whereby the researcher simultaneously collects, codes, and analyzes the data in order to decide what data to collect next."[90] While this study is not formally a grounded theory project, a grounded theory-inspired approach to data collection and generation aligns well with the philosophical

[88] With regard to qualitative sampling, the concept of information power holds that the more study-relevant information a sample holds, the lower the number of participants needed. A study with broad aims and participants less specific to those aims requires more participants than a study with narrow aims and specific participants. Malterud, Siersma, and Guassora, "Sample Size in Qualitative Interview Studies: Guided by Information Power."
[89] I use the term database in this dissertation to describe the organized collection of documents and interviews for each case. I opted for database as my descriptor because it is the most common term in case study methods. In humanities scholarship, the terms corpus or collection could also apply here. Gries recommends Zotero as an ideal software tool to capture and organize large, diverse types of data for her rhetorical iconographic tracking method. *Still Life with Rhetoric*.
[90] Becker, "Common Pitfalls in Published Grounded Theory Research," 255.

underpinnings of rhetorical inquiry, because both leverage simultaneous data collection and analysis with the critic/researcher endeavoring to remain open to different and emergent interpretations during analysis.[91] My process of database building and concurrent analysis closely parallels the four-step process of tracing visual images developed and described in detail by rhetorician Laurie Gries (i.e., iconographic tracking) — though, mine focused on tracking text-based reports, rather than images.[92] To summarize, Gries describes these four steps as:

1. *Data exploration and hoarding*: Digital research to collect a large data set using basic search engines, embracing uncertainty and a "sense of aimless wonder" to explore open-mindedly while avoiding the temptation to begin performing close analysis.[93]
2. *Assembling data into a database*: Sorting and "mining" collected data into a database (i.e., a collection of patterned information significant to provisional research goals), often using tags and folders to make relationships and trends visible.[94]
3. *Expand and diversify the database*: Recursively move between data mining and organizing the database, with narrower searches to follow emerging threads and fill gaps, potentially using alternative search engines, scholarly databases, social media sites (e.g., YouTube, Facebook).
4. *Close, specific study*: Map out specific processes of interaction between the collected data and the object of interest (in Gries' case, a particular image; in this study, the three anchor texts). These include but are not limited to processes of composition, production, distribution, and circulation.

My process of data collection for this dissertation essentially followed these steps. While the steps help illustrate my methodological approach, their sequence was not strictly fixed in practice. Gries explains well: "Phases are only described as such to help readers develop a chronological sense of how this method works. When it comes to enacting this method, the phases of research do not necessarily unfold in a perfectly linear fashion."[95] In my study, the

[91] Charmaz, "Grounded Theory as an Emergent Method."
[92] Gries, *Still Life with Rhetoric*.
[93] Gries, 111.
[94] Gries, 111.
[95] Gries, 110.

same was true. Sometimes, I would move back from database organization to broad exploration; other times close analysis of textual-intertextual dynamics in step four led to recursive rounds of sorting and searching. Having a structured approach, however, helped me more effectively navigate the collection and analysis of a large number of interrelated texts.

My concurrent data collection, generation, and analysis period started in August 2023 and concluded in December 2024. During that period, whenever I would come across a text referencing an anchor text, I would add it to the case database. To create manageable boundaries around the cases, documents were eligible for inclusion if they were published between January 2014 (the year the earliest anchor text, the O'Neill report, was commissioned) and December 2024 (because of PhD program timing). This timeframe provided me a long-term view while offering reasonable limits on the scope of the cases for manageability.

As part of step three to expand and diversify the case databases, I supplemented data collection with data generation by conducting semi-structured interviews with key informants to gain additional contextual insights into the case.[96] I treated the resulting interview transcripts as additional texts to incorporate in each case study database.[97] I wanted to speak to people who were actively involved in writing the anchor text (i.e., those "holding the pen," and typing the words of the report) to gain information not otherwise available in public sources. Additionally, to bolster my understanding of the texts' reception, I wanted to speak with people representing the reports' target audiences (i.e., policymakers). As the study progressed, I also wanted to hear from people who had been acknowledged in the reports as actively contributing in some way

[96] Rhetorician Jim Ridolfo has argued convincingly that including practitioner stories in analyses is essential to understanding rhetorical delivery strategies, e.g., "Rhetorical Delivery as Strategy."

[97] Rhetoricians John Angus Campbell and Ryan Clark have persuasively argued that authorial intent is a valuable interpretive resource for rhetorical criticism. They argue that critics can strike a productive balance by considering evidence of authors' intent alongside evidence from audiences and texts themselves to cultivate a nuanced and contextual understanding of intent, "one in which the author is more than a mere site of articulation and much less than a god." See Campbell and Clark, "Revisioning the Origin," 292.

(i.e., offering expertise, reviewing drafts). At the start of the project, my target for interviews was to conduct four per case (two authors, two audience members, 12 total).[98] That grew to 18, when I added a target of two contributor interviews per case. The interviewee categories, however, proved less tidy than they initially seemed.[99] I realized some interviewees might see themselves more as authors, whereas I might categorize them as a contributor. Some interviewees played different roles in more than one case. Ultimately, my goal for these interviews was not about representative sampling to make generalizable claims about the experiences of the *interview participants* — it was about generating new texts (i.e., the interview transcripts) that could add additional and otherwise inaccessible information to my databases to learn more about each *case*.[100]

To organize my interview recruitment, I started with a long-list of potential interviewees. For authors and contributors, I pulled all listed names from the anchor texts. Of the 18 authors named across the anchor reports, I first reached out to those I felt (based on existing information about the case) would have unique perspectives to add (i.e., purposive interview sampling). I emailed authors in small batches, sending an initial interview request and then two follow-up emails if needed. By the end of the project, I emailed 11 authors. Eight agreed to an interview, and two declined for lack of time. Of the 214 potential contributors named across the anchor reports, by the end of the project I had emailed 18 requesting interviews. Ten agreed to an interview, three declined (two due to lack of time, one because they did not recall the report

[98] By speaking with at least two people per "type" of interviewee, I hoped to reduce the chance that a single person's viewpoint might inadvertently dominate the collected interview data, while eliciting a broader range of perspectives.
[99] Sociologist Erving Goffman proposed that the idea of a writer/speaker actually encompasses multiple different roles: the author, who selects the words and sentiments; the animator, who actually inscribes or speaks the words; and the principal, whose positions are being represented in the words. Going further, English professor Paul Prior points out that writing in organizations and teams is even more complicated, since such authorship is also distributed across a change of participants over time, and also includes editors who alter the text. Goffman, *Forms of Talk*; Prior, "Tracing Process: How Texts Come Into Being."
[100] Keep in mind that this is a qualitative case study where interviews are one source of information to learn about the cases, not a qualitative interview study to learn about themes in participants' views and experiences.

well), and five did not reply.[101] The initial list of potential policymaker "audience members" was more fluid, and I continued to add potential interviewees to my long-list as I analyzed other texts in the database (e.g., adding someone who was quoted in a media article, adding someone who referenced an anchor report at a government committee hearing). By the end of the project, I had emailed 27 people who I considered to represent target audience members for the reports. Five agreed to interviews, two replied with additional information by email but declined to interview, seven declined for lack of time, and 13 did not reply after two follow-up emails. Timing of interview requests and replies meant that I overshot my initial target of 18 interviews — if someone replied and agreed to an interview after I had already reached my target, I still conducted the interview. In total, I spoke with 23 individuals with specific knowledge of the cases, to add additional information and nuance to my case databases. (See Appendix D for participant list).

As I recruited and conducted the interviews, I drew heavily on methodological guidance for qualitative "elite" interviews because it aligned well with the key informants I wanted to contact.[102] Defined as individuals whose social capital, position, and networks grant them the ability to directly exercise power or influence those with power, interviews with such "elite" participants can provide access to insider knowledge of a case that may not be available through other sources.[103] While valuable, elite interviews are also known to present unique challenges. Gaining access to elite participants can be particularly difficult, as they often have busy schedules. Even when access is secured, interviewees may be time-strapped, limiting the interview length. Depending on the interviewee and researcher's positions, power dynamics

[101] One of these was an off-the-record interview, which I conducted because the interview participant had unique insights to offer but felt their current work in the space would not enable them to speak freely on the record.
[102] e.g., Hertz and Imber, *Studying Elites Using Qualitative Methods*; Conti and O'Neil, "Studying Power."
[103] McClure and Mcnaughtan, "Proximity to Power"; Mikecz, "Interviewing Elites"; Niu, "Navigating Power Dynamics in Elite Interviews."

might require careful navigation.[104] Methodological advice suggests it is critical to do extensive pre-interview preparatory research, to tailor questions for each elite interviewee (e.g., based on their personal and professional biographies and prior statements, and with regard to my specific research aims).[105] Consequently, I reviewed each interviewee's background and public statements about AMR and the relevant anchor text(s), adding pertinent documents to the case database as I went. Before conducting interviews, I piloted the interview guide and pre-interview preparation process with two elites who worked on another report on my long-list of candidate texts. Piloting helped me refine the flow of questions in my interview guide and to trial my pre-interview preparation process.[106] Feedback and conversations from my doctoral committee and additional faculty members with qualitative interviewing expertise further refined my approach, for example by preparing more specific follow-up probes to have handy if needed.

For each confirmed interview, I sent a reminder email in advance summarizing the purpose of the study and showing the types of resources I had already consulted, to orient the interviewees. (See Appendix E for example pre-interview materials and the interview guide.) Interviews were all conducted on Zoom and recorded with participants' consent. Interviews lasted between 20 and 60 minutes (averaging about 40 minutes), and were conducted between September 2023 and October 2024. Interview audio recordings were transcribed initially using Rev AI transcription.[107] Then, I listened to each interview recording alongside the initial transcript to check for accuracy and correct any transcription errors. I retained filler words such as, "umms" and "ahhs," false-starts, repeated words, and other verbal mannerisms in the transcripts. However, I have omitted these verbal disfluencies from the written quotes in the

[104] Bickford and Nisker, "Tensions Between Anonymity and Thick Description When 'Studying Up' in Genetics Research."
[105] Liu, "Interviewing Elites"; Mikecz, "Interviewing Elites"; Empson, "Elite Interviewing in Professional Organizations."
[106] Kallio et al., "Systematic Methodological Review."
[107] "Rev Services."

dissertation to enhance clarity and readability. People speak and listen differently than we write and talk, and removing these verbalisms does my participants and their points better justice. Anonymity was not a factor in these interviews — interviewees consented to speak "on the record" and give information that could be quoted and attributed to them. However, following journalistic norms, I did tell interviewees they could share information off the record (i.e., for my understanding, but not to be quoted or attributed to them).[108] In cases where interviewees wanted to share a comment with me off the record, I deleted that segment from the interview transcript before adding it to the case database.

Member checking is the subject of much methodological controversy, and can be conducted many different ways.[109] Generally, member checking involves returning collected data or synthesized research results to participants, to check for accuracy and resonance.[110] In this study, I conducted a member check for two reasons: 1) As a professional courtesy to interviewees to share with them how I planned to use their direct quotes, and; 2) As a trustworthiness-enhancing step to check and report on how interviewees feel about my use and interpretation of their words. I conducted member checks by sending interviewees a list of any direct quotes used, along with a brief summary of the study's main arguments. (See Appendix E for the member check template.) I requested that interviewees reply within 14 days with any questions, comments, or concerns. Eighteen responded by the deadline. Of those who responded, all confirmed the accuracy of their quotes No participants expressed any concerns or objections to how their quotes were used. One requested a minor wording clarification to a quote, which I made.

[108] Schuman, "Explainer"; "What Do 'on the Record' and 'off the Record' Actually Mean?"
[109] For example, see Thomas, "Feedback from Research Participants"; Vella, "In Pursuit of Credibility."
[110] Birt et al., "Member Checking."

As this is a fundamentally qualitative study, I have not focused on quantifying descriptive characteristics of the texts included in each case database (e.g., total number of words, counting texts by publication year or type). For the purpose of textual-intertextual rhetorical analysis, the total number of texts or the amount of text in a given case is not particularly relevant for generating insights — what matters most is the *qualitative contents* of the texts, not the overall quantity of text. However, for the purposes of methodological transparency, description of the databases is helpful to give readers a clearer sense of the project. Ultimately, the database for the O'Neill case contained 396 texts, the IACG case 235 texts, and the CSE case 100 texts. I define texts broadly in this project, and these included the transcripts of interviews conducted, alongside media articles, academic articles, reports, briefings, government debate transcripts, podcast transcripts, videos of presentations and panels, slide decks, draft documents, webpages, blogs and websites.

In qualitative research — as in rhetorical criticism — ultimately the researcher is the instrument for both data collection and analysis. Throughout the project, I made judgment calls on what to explore, ask, seek out, include, and exclude from the case databases. So, information about myself as the researcher can boost transparency while helping readers interpret my claims. My academic background is primarily in communication studies and applied journalism, with experience in a range of qualitative research methods. I work as a professional communications practitioner and consultant, mostly in the Canadian health care system, with clinical and scientific researchers, leaders, and policymakers. However, I came into this project with negligible knowledge of AMR. I was aware of AMR based on some work with Canadian hospitals, and had come across some work from the Wellcome Trust on AMR communication, in

the course of my science communication work.[111] At the first stages of this project when I was considering potential topic areas for this project, headlines about AMR at the time turned my attention to the issue as an ideal space to explore my research questions about knowledge mobilization. I was not known to the interview participants prior to this study, and had not previously worked in connection to any of the cases. Considering the communication of global issues like AMR across national policy contexts, I recognize my perspective is shaped from my vantage point growing up and working in Canada and the U.S., i.e., Western, English-speaking high-income countries.

My academic training and more than seven years applied work experience inform my personal "research paradigm," i.e., my set of beliefs and assumptions about ontology (the nature of reality), epistemology (the nature of knowledge), and axiology (the role of values in research). Briefly, I believe reality is external (independent of human perception), and also dynamic — ever-changing and shaped by experiences and practical outcomes (pragmatic realist ontology). I believe that reality is partially knowable, but only through the subjective lenses of individuals (interpretive epistemological stance). As a researcher, I see my values and subjectivity as central to my work, so — as opposed to striving for objectivity — I aim to be aware and reflexive of how values inform my work (value-laden axiology). Together, this forms what could be termed a pragmatic interpretive realist paradigm, although others might label it differently. Regardless of the label, my rhetorical analysis approach and use of case studies in this dissertation flows from these beliefs about reality, knowledge, and research. Throughout this project, I used reflexive journaling as part of my research practice, to notice and reflect on how my subjectivity influenced the research process.

[111] Wellcome Trust, "Reframing Resistance: How to Communicate about Antimicrobial Resistance Effectively."

Case Descriptions

When reporting case studies, descriptions must provide readers with enough information to understand how the findings might relate to their own contexts. The challenge is to provide enough detail to convey the complexity of the case without overwhelming readers with information.[112] Below, I aim to strike this balance by describing the cases in relation to my overarching research questions, overviewing the production context and text for each case (see Table 1 for a summary), before summarizing reception and noting key learning opportunities.

In what follows, I argue that each report was relatively successful in achieving its rhetorical aims. However, I do not claim that every strategy in the reports constitutes a great rhetorical success. Nor does the presence of some rhetorical shortcomings imply that the reports were complete failures. Rather, important lessons can be gleaned from each report as well as comparisons between them, especially with careful attention to context. With this nuanced perspective toward what makes a report successful, I aim to avoid two common pitfalls, both summarized by rhetoricians Danette Paul, Davida Charney, and Aimee Kendall:

> [1] Reasoning about textual features — such as distinguishing which rhetorical strategies are effective and which are not — is too often colored by prior assumptions about the success or failure of the text. The problem is that scholars too easily assume that all the features of successful texts are effective and that none of the features of unsuccessful texts are… [and]
>
> [2] Too often in rhetorical studies, success is defined as an absolute and immediate response. Yet, in the deliberative realms of government agencies, law courts, and corporations, decisions are continually revisited. A specific proposal for solving a problem may be rejected, but enough attention may have been drawn to the problem that some other action is taken.[113]

To avoid these potential problems, I take a flexible stance when considering the rhetorical successes and shortcomings of the reports, their effects on readers, and their impacts on

[112] Baxter and Jack, "Qualitative Case Study Methodology: Study Design and Implementation for Novice Researchers."
[113] Paul, Charney, and Kendall, "Moving beyond the Moment," 376, 394.

policymaking over time. The aim of this project's case studies is not to evaluate each report in and of itself — my purpose is to *use* the cases to learn about reports' rhetorical strategies in context, observing what seemed to work in these cases, in order to theorize why and how it worked in ways that could offer applicable insights for future report-writing.[114]

Table 1. Case Summaries

Anchor	**O'Neill Report**	**CSE Report**	**IACG Report**
Production Context			
Full Title	*Tackling Drug-Resistant Infections Globally: Final report and recommendations*	*Strategic and operational guidance on animal and environmental aspects: National action plans on antimicrobial resistance for developing countries*	*No Time to Wait: Securing the Future from Drug-Resistant Infections — Report to the Secretary-General of the United Nations*
Published	2016	2017	2019
Timeframe	Review officially commissioned July 2014; report published May 2016.	Planned and developed through fall 2016 (expert workshop hosted September 2016), report published January 2017.	Group established in March 2017 (following a September 2016 UNGA HLM Political Declaration), report published April 2019.
Author Location	UK (High-income country, Global North).	India (lower-middle-income country, Global South).	International organizations (WHO, FAO, WOAH).
Writing Team / Structure	Review chair, with a team lead and five primary staff, drawing on a network of ad-hoc advisors.	Two lead writers, overseen by CSE organizational leaders (CSE is an independent non-profit).	IACG secretariat (director plus seven primary staff), supporting 25 group members, three co-conveners and two co-chairs.
Production Process	Commissioned research studies and reports, produced eight interim reports, consulted with numerous experts and stakeholders.	Initial background research and briefs on current practices, hosted deliberative expert meeting to write draft, experts reviewed draft pre-publication.	Produced six initial discussion papers. Solicited comments on discussion papers and a draft report. Incorporated comments into final draft.
Goals	Raise awareness about AMR as a policy problem that requires policy action, highlight the economic aspects of AMR	Raise awareness about the environmental and animal aspects of AMR, provide guidance for LMIC to incorporate in national action plans on AMR	Raise awareness of AMR actions needed, synthesize existing recommendations and publish new recommendations that are catalytic, disruptive and innovative.
Text			
Pages	84	21	28
Contents	Foreword, executive summary, background, recommended interventions, funding, implementation, intervention summary, acknowledgements	Foreword, introduction, summary of deliberations, strategic and operational guidance (discussion & table of recommended activities), acknowledgements.	Key messages, summary of recommendations, context, process, background, recommendations, IACG members.

Abbreviations: AMR – Antimicrobial resistance. HLM – High Level Meeting. FAO - Food and Agriculture Organization of the United Nations. LMIC – Low- and -middle-income country. UNGA – United Nations General Assembly. WHO – World Health Organization. WOAH - World Organisation for Animal Health.

[114] In Stake's terminology, I am conducting instrumental case studies (where cases are used to gain insights into a broader issue), rather than intrinsic case studies (where the goal is to understand the case in and of itself). Stake, *Multiple Case Study Analysis*.

O'Neill Report

In 2014, UK Prime Minister David Cameron commissioned an independent review of AMR, to assess the issue from a global economic standpoint and make recommendations on policy actions. The review was co-sponsored by health research charity Wellcome Trust. The UK's Chief Medical Officer at the time, Sally Davies, had become increasingly focused on AMR in the years prior. She saw a need for a large-scale review on AMR with an economic perspective, and was key in persuading Cameron to initiate the project.[115] The overarching goal of the review was to examine the growing threat of AMR and to recommend solutions, especially from an economic perspective. Former Goldman Sachs economist Jim O'Neill was appointed the chair of the review team. Although he had no scientific training or familiarity with AMR before the review, O'Neill was excited to try something different and contribute his economic perspective. O'Neill has repeatedly joked that he first "learned to pronounce antimicrobial resistance" when he took on the review.[116] Writing about taking on the role of review chair, O'Neill has reflected:

> I received this call from a senior person at the UK Treasury, telling me they had an important, really interesting project for me. When he told me, I struggled to pronounce the phrase, 'antimicrobial resistance' (and indeed, I did for the next few weeks.) …Why was I asked? There was a conscious decision from David Cameron's advisors to find someone to lead an independent global review, who was not a scientist, and who had some feel for the modern, complex world. Sally Davies, the country's Chief Medical Officer, played a big role, and wisely suggested that, it needed someone from outside the mainstream AMR space, who among other things, would at a minimum, be able to raise the awareness of the issue.[117]

[115] These case descriptions draw on information gathered in the interviews I conducted, and from a variety of textual sources in the case databases. For example, this claim is based on what Sally Davies shared in her interview with me on Apr. 16, 2024. She has given many other public interviews and made the same point, for example in Lathbridge, *What Do the Challenges of AMR Look like Globally?* This claim is also supported by my interview with Jim O'Neill on Sept. 6, 2023, and by his own writing and public commentary, such as Collier and O'Neill, "Two Years On." In the remainder of this section, any specific claims that do not have a citation are based on information that was gathered from my interviews with the individuals directly involved.
[116] For example, see "Oral Evidence: Antimicrobial Resistance, HC 962"; Collier and O'Neill, "Two Years On," 309.
[117] Collier and O'Neill, "Two Years On," 309.

The idea was that O'Neill could bring a fresh, outsider perspective to the historically insular technical and scientific discussions of AMR to date, and help generate broader awareness of the issue among global policymakers. In his role as chair, O'Neill built out a small review team, hiring a team lead plus five primary staff. None of the core team members had prior experience or expertise in AMR; instead, their backgrounds were in economics and law.

The team decided to publish a series of interim publications, leading up to the final report. O'Neill was clear that he wanted the review process to last no longer than two years, so that the final report could be comprehensive, but timely. The review team commissioned various additional reports and research, to inform their eight interim publications, which each focused on different aspects of AMR as an issue. O'Neill decided not to convene a standing scientific advisory group, opting instead to seek input from a wide range of experts and stakeholders as needed. The team had numerous exploratory conversations, and would often return to consulted individuals for feedback and additional conversations as the recommendations were being developed. The team took advantage of policy-focused events such as the World Economic Forum to discuss their ideas, raise awareness, and get formative input. Throughout the 19-month review process, they aimed to influence attention to AMR at other events, for example by working alongside many other champions to try and secure a fall 2016 United Nations (UN) General Assembly declaration and High-Level Meeting on AMR. Ultimately, the Review on AMR's *Tackling Drug-Resistant Infections Globally: Final Report and Recommendations* was published in May 2016 brought together insights from their prior work. In this dissertation, I use "O'Neill report" as shorthand for this final publication by the Review on AMR.

The final report text is an 84-page PDF. It opens with a foreward from O'Neill, followed by an executive summary and overview of the AMR problem. Then it presents 10 recommended

policy interventions and closes with a summary of what the interventions would cost. The report concludes by thanking a long list of contributors. Throughout the report, simple full-page infographics are interspersed to illustrate key points, although the report is primarily text and does not include any photographs. Dark blue boxes break up the body text and highlight specific examples and additional information.

In terms of reception, the O'Neill Report received substantial and lasting engagement across a variety of contexts, including news media, policy settings, industry, and academia. It drove spikes in media coverage and global attention on AMR,[118] generating over 100 headlines globally upon its publication. Overall, it had a positive reception.[119] The O'Neill report is credited with sparking the Davos AMR Industry Declaration, an agreement to take collective action on AMR signed by more than 100 companies.[120] The report is also credited with inspiring the creation of an AMR Action Fund and the implementation of antibiotic use targets for farming in the UK, among other policy actions.[121] The Review on AMR played a role in securing and informing the UN General Assembly High-Level Meeting, which had been an initial goal.[122] In 2022 the UK launched a pilot alternative payment model for antibiotics, as the O'Neill report advocated.[123]

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[118] Liao et al., "Drivers of Global Media Attention and Representations for Antimicrobial Resistance Risk"; Podolsky, "The Evolving Response to Antibiotic Resistance (1945–2018)."
[119] While the vast majority of reception evidence takes a positive stance toward the O'Neill report, it still had some detractors. There were some critiques of the AMR estimates put forward by the report, and some complaints from agricultural and pharmaceutical industry groups about the O'Neill report's recommendations. For more details on these debates, see Ackerley, "Effective Argumentation for Action in Health Policy."
[120] AMR Industry Alliance, "Declaration by the Pharmaceutical, Biotechnology and Diagnostics Industries on Combating Antimicrobial Resistance."
[121] Cueni, O'Neill, and Outterson, "Webinar: Creating a New Generation of Antibiotics"; Blake et al., "Evaluation of the Implementation of the UK Antimicrobial Resistance Strategy in the Food Chain"; Clift, "Review of Progress"; Sainsbury, *Microbiologist*; Taylor and Smith, "The O'Neill Review"; HM Government, "Government Response to the Review on Antimicrobial Resistance"; Piddock, "Reflecting on the Final Report of the O'Neill Review on Antimicrobial Resistance."
[122] Interviews by the author with: Jim O'Neill, Sept. 6, 2023; Hala Audi, Oct. 17, 2023. See also "UK Secures Historic UN Declaration on Antimicrobial Resistance."
[123] The subscription-style payment model is not one the O'Neill report directly recommended, but the O'Neill report is credited for bringing attention to the economic issues and need for alternative payment models in antibiotics. Outtandy, "UK to Provide Upfront Payment for New Antibiotics via Worldfirst 'Netflix Style' Scheme."

The O'Neill report case offers valuable learning opportunities. None of the core team had a background in AMR prior to 2014, yet they were able to gather, synthesize and report on AMR expertise in ways that clearly resonated with their target audiences. The O'Neill report thus offers a valuable opportunity to learn about success in this type of translational role, mediating between policy settings, industry interests, and technical, scientific expertise. A key goal of the report was to generate awareness and policy attention for AMR. Its undeniable success in raising AMR's profile on various policy agendas and informing how AMR was discussed as an issue makes it a valuable case to learn from.[124] Lastly, something that is remarkable about the O'Neill report reception is its continued use and relevance, years after its publication. The case study database covers eight years post-publication with ongoing references to the report as a landmark document, providing an opportunity to learn about the ongoing circulation and use of the text beyond the moment of publication.

CSE Report

The Centre for Science and Environment (CSE) is a public-interest research and knowledge-based advocacy think tank based in New Delhi, India.[125] Since its establishment in 1980, CSE has undertaken work across a wide portfolio of environmental topics, including air and water pollution, renewable energy, and recycling. In 2010, CSE's sustainable food systems unit conducted a study on honey, finding high levels of antibiotics in samples tested. AMR was not a major work stream for CSE at that time, but as global interest and awareness of AMR increased, so too did CSE's — especially because CSE leaders felt that AMR discussions at the time were overly focused on human health, and neglected other important aspects of AMR. The

[124] While agenda-setting is only one factor in achieving policy change, it is important — i.e., prioritizing a given issue on a policy agenda is necessary, if not sufficient for policy change.
[125] "About CSE."

World Health Organization's (WHO) global action plan on AMR directed all countries to develop national action plans by 2017, and the 2016 UN Declaration on AMR further encouraged national action plans.[126] However, CSE leaders felt there was a dearth of guidance for low- and middle-income countries (LMICs) on how to create such plans, with little advice on environmental or animal aspects of AMR. So, inspired by the second-ever World Antibiotic Awareness Week in November 2016, CSE decided to host a workshop to glean insights from global experts about the best activities and policies for LMIC to consider regarding AMR's environment and animal aspects. This marked CSE's first foray into international AMR policy, as its previous work had been more technically focused and limited to India. CSE created a small AMR-focused team, consisting of a new employee and a manager, with CSE senior leaders offering ongoing guidance on strategy. They drew up a list of potential invitees with expert insights on AMR policy activities. As the invitees confirmed their attendance, the CSE team realized they had a rich depth of expertise to draw on, and decided they wanted one output of the workshop to be a report that others could benefit from. They aimed to translate expert insights from the workshop into a sharable output. So, the CSE team put careful thought and preparation into the structure of the meeting, aiming to facilitate productive conversations between people with different expertise. Ultimately, CSE hosted the two-day workshop with 50 experts in New Delhi. Then, the CSE team crystallised the workshop discussions into a report draft, which they circulated for input by the attendees before publishing the final version in January 2017, titled *Strategic and operational guidance on animal and environmental aspects: National action plans on antimicrobial resistance for developing countries*.[127] By publishing the report, CSE aimed

[126] World Health Organization, "Global Action Plan on Antimicrobial Resistance"; United Nations, "Political Declaration"; Anderson et al., "Promoting Sustainable National Action to Tackle Antimicrobial Resistance."
[127] "CSE Report."

both to raise awareness of the environmental and animal aspects of AMR and to offer guidance for LMICs developing their national action plans. In this dissertation, I refer to this specific 2017 document as the "CSE report" for short.

The CSE report is 21 pages long. It consists of only text and tables, with no images or graphics. It begins with a foreword from a CSE senior leader, followed by a short introductory section providing background on the issue of AMR. The report goes on to summarize workshop deliberations in three thematic areas: responsible antibiotic use in food animals; surveillance of antibiotic use, residues and resistance; and environment management to contain AMR. The summary includes examples of best practices from LMICs and high-income countries, and discusses the unique challenges facing LMIC. A callout box highlights a supplementary review CSE conducted on existing national action plans. Then, three large tables list recommended activities for LMIC to include in national action plans, organized by thematic area and type of intervention, including policy recommendations. The report concludes by thanking and acknowledging those who contributed expertise via presentations and workshop deliberations.

In terms of reception, undertaking the workshop and report-writing helped CSE advance its goal to influence LMIC national action plans and to garner more policy attention on AMR's environmental dimensions. When the report was complete, CSE shared the final document directly with all workshop attendees, as well as disseminating it via its typical communication channels, including its website, op-eds, and newsletter. Within India, CSE was invited to participate in the development of India's national action plan to share the translated insights from the expert workshop and report. While India's AMR action plan was a collaborative effort, the final document did incorporate exact wording from the CSE report, such as the strategic intervention to develop "standards for antibiotic residues in food from animals such as chicken,

eggs, milk and fish," as part of a broader objective to strengthen surveillance for AMR in humans, animals, food and environment.[128] Other organizations supported and amplified the CSE report by sharing it via their websites and newsletters.[129] Following the report's publication, CSE experienced an increase in invitations to present and participate in national and international AMR policy discussions.[130] Internationally, CSE leveraged the report to initiate work in Zambia and Zimbabwe, to shape and prioritize national action plan implementation.[131] Since the 2017 report, CSE has continued to expand its AMR program, conducting additional studies, expert workshops, and policy reports.[132]

There are many opportunities to learn from the CSE report, and it also offers an important contrast to the other reports included in this multiple case study. CSE's broad and varied work as a non-governmental think tank aligns well with existing definitions and research on intermediaries,[133] and this provides an opportunity to examine how an intermediary *organization* can interface between scientific and policy spheres (in contrast to the other two cases of reports written by ad hoc, time-limited teams). At the project-team level, there is also an opportunity to learn from how the CSE report writers handled the task of inviting, facilitating, and synthesizing expert knowledge to create the final report for policy audiences. CSE's lead report writer, Rajeshwari Sinha, had a PhD in microbial biochemistry but emphasized that she had to develop an entirely new translational skill set for the project: "I landed at CSE, and then I realized that this is a completely different area where I had no prior experience. It's policy, it has to do with

[128] "National Action Plan on Antimicrobial Resistance (NAP-AMR) 2017-2021," 30; "CSE Report," 15.
[129] e.g., "National Action Plans – Policy"; Global Antibiotic Resistance Partnership, "GARPnet News (Newsletter)."
[130] e.g., "Bracing for Superbugs"; "Foundation Names Expert Review Committee for next AMR Benchmark."
[131] Centre for Science and Environment, "Prioritized Activities of Zambia's Multi-Sectoral National Action Plan on Antimicrobial Resistance"; "Online Workshop on Implementation Status and Reprioritization of Zimbabwe's One Health Antimicrobial Resistance National Action Plan."
[132] "Antimicrobial Resistance Programme."
[133] Breckon and Boaz, "Evidence Intermediary Organisations: Moving beyond a Definitional Morass."

informing policy makers."[134] Sinha embraced the intermediary identity of the role: "Now, I operate at the intersection of science, policy, and health."[135] A primary aim of the CSE report was to bring more attention to AMR as a "One Health" issue with implications for environmental and animal health, as well as human health.[136] Since the CSE report reflected and contributed to a growing awareness of a One Health perspective on AMR, this case offers an opportunity to explore their agenda-setting efforts to intervene in complex global policy discourse. Lastly, since CSE and its AMR team have continued expanding their work in policy spaces following the 2017 report, this case study provides an opportunity to examine how the text has circulated and been used over time.

IACG Report

The 2016 UN declaration on AMR called for the establishment of an Interagency Coordination Group (IACG) on AMR, "to provide practical guidance for approaches needed to ensure sustained, effective global action to address AMR" and report back to the UN Secretary-General and 193 member states by the 73rd General Assembly session.[137] The IACG was officially established in March 2017 and included a mix of individual subject-matter experts and representatives from UN organizations.[138] The group was also supported by an ad hoc secretariat to facilitate the writing process. Initially, the IACG divided itself into six sub-groups, each focused on a different aspect of AMR. The sub-groups developed discussion papers on their

[134] Rajeshwari Sinha, interview with the author, Sept. 21, 2023.
[135] "The Uncharted Frontier."
[136] "CSE Report," 5.
[137] i.e., between Sept. 2018 and Sept. 2019. "Final Draft of the Political Declaration of the High-Level Meeting of the General Assembly on Antimicrobial Resistance.," 7.
[138] The group's announcement listed 27 members. Between 2017 and the report's 2019 publication, there were some small shifts in membership, for instance as organizational representatives changed roles, or as individual members were added. See "Statement: Interagency Coordination Group on Antimicrobial Resistance"; and Ghebreyesus, "7th Meeting of the Interagency Coordination Group on Antimicrobial Resistance." By the time the final report was published, the IACG's structure had two, high-level co-chairs (the UN Deputy Secretary-General and WHO Director General), three co-conveners, and 25 group members.

respective areas. However, there was a perception — both inside and outside the group — that not enough progress was being made.[139] In June 2017, the World Health Organization (WHO) appointed a new director general, which also shifted the IACG's leadership and operating context.[140] In 2018, a director, Haileyesus Getahun, was brought in to lead the secretariat, which was also stabilized to a primary staff of seven. The IACG refocused on synthesizing recommendations that would be innovative, catalytic, and disruptive to the status quo. The sub-groups' discussion papers were used to initiate a broad global discussion, garnering written submissions from 153 stakeholders (including UN member countries, non-governmental and civic society organizations, private sector organizations, individuals, research groups and research funders). Taking this broad input into account, the group drafted an initial report over a series of meetings. The draft report was shared in a second round of broad consultations to inform the final draft, generating another 80 written submissions from stakeholders and engaging more than 400 people at a variety of in-person and virtual events worldwide. All suggested changes were collected, considered, and addressed in some way — and the group used a consensus process to finalize the report (i.e., all group members had to agree on the included recommendations). Ultimately, the final recommendations were submitted to the UN Secretary General for consideration in April 2019, titled *No Time to Wait: Securing the Future from Drug-Resistant Infections — Report to the Secretary-General of the United Nations*.[141] As shorthand, I refer to this document as the "IACG report" throughout the rest of the dissertation.

The IACG report is 28 pages long. It starts with a one-page summary of "key messages in this report," distilling its main arguments about AMR and the need for action into bullet points.

[139] Sifferlin, "Here's How the World Is Taking On Superbugs"; *Antimicrobial Resistance.* Also, interviews by the author with group members in 2023 and 2024.
[140] Huet, "World Looks for a Better Doctor"; McNeil Jr. and Cumming-Bruce, "W.H.O. Elects Ethiopia's Tedros as First Director General From Africa."
[141] "IACG Report."

Next is another one-page summary of its 14 recommendations, organized into five categories. Then, the IACG report overviews its production context, process of developing recommendations, and relevant background information about AMR as an issue. The successive recommendation sections state each recommendation with relevant considerations, using relatively formal wording and writing conventions typical for UN documents. The report ends with a list of the group's members. The report includes two graphic figures — the first illustrating drivers of AMR, and the second showing how the IACG's recommendation areas support a One Health response to AMR and link to UN Sustainable Development Goals.

In terms of reception, the specific, target recipient of the report — the UN Secretary General — responded with a report of his own, noting how the IACG report sparked important shifts in perspective and advocating for implementation of the IACG's recommendations.[142] The IACG report received high-profile media coverage upon its launch and was heralded as a "landmark" report in AMR.[143] It continued to be referenced as the impetus and rationale for subsequent policy actions implementing its recommendations, including establishing a Global Leaders Group on AMR, creating a multi-stakeholder partnership platform on AMR, starting a pooled AMR Multi-Partner Trust Fund, and eventually initiating an Independent Panel on Evidence for Action on AMR.[144] Stemming from the IACG report, key UN organizations signed a memorandum of understanding to collaboratively address AMR and establish a permanent,

[142] "Follow-up to the Political Declaration of the High-Level Meeting of the General Assembly on Antimicrobial Resistance Report of the Secretary-General."
[143] Jacobs, "U.N. Issues Urgent Warning on the Growing Peril of Drug-Resistant Infections"; Harvey, "Antibiotic Resistance as Big a Threat as Climate Change – Chief Medic"; Young, "Drug-Resistant Diseases Could Kill Millions Unless the World Takes Action."
[144] UN Multi-Partner Trust Fund Office, "Antimicrobial Resistance Multi-Partner Trust Fund: Progress Report 1 January – 31 December 2019"; "Global Leaders Group on Antimicrobial Resistance- About Us"; "AMR Multi-Stakeholder Partnership Platform: Frequently Asked Questions"; "Political Declaration of the High-Level Meeting on Antimicrobial Resistance."

joint secretariat to support collaborative work.[145] In addition to positive reception and action, the IACG report also received some criticism for not having made concrete or ambitious enough recommendations. For example, the Antibiotic Resistance Coalition argued, "A key shortcoming of the IACG recommendations was its failure to go beyond the floor of consensus on immediately banning the use of highest priority critically important antimicrobials for growth promotion."[146]

A case study of the IACG report represents an opportunity to learn about a complex multi-organization writing process, featuring broad consultation and generating long-term impacts and challenges. The IACG represents intermediary work at two levels. The group overall can be seen as an intermediary body, which aimed to facilitate knowledge exchange among its many members' and member organizations' perspectives; synthesize existing knowledge, technical expertise and recommendations; and present its findings to an international audience of policymakers. Within the IACG, the secretariat team also served an intermediary function, acting as process facilitators and go-betweens among group members. The secretariat director, Haileyesus Getahun, was a medical doctor and epidemiologist focused on HIV/AIDS and TB, but had not previously focused on AMR. The report's primary writer, Ian Grubb, was trained as a lawyer and had worked for years in HIV/AIDs areas before joining the IACG project, which was his first experience with AMR work.[147] The secretariat aimed to facilitate conversations and consensus among the IACG on the final contents of the report. The IACG's substantial public consultation effort offers an opportunity to see how various types of engagement may have

[145] The four organizations with this "quadripartite" agreement and joint secretariat supporting AMR are the Food and Agriculture organization of the UN (FAO), the Organisation for Animal Health (WOAH), the UN Environment Program (UNEP) and the WHO.
[146] IACG on AMR, "Comments Received on the Draft Terms of Reference of the One Health Global Leaders Group on AMR," 66.
[147] Ian Grubb, interview with the author, Sept. 27, 2023.

influenced the final draft. Given the IACG report's goal to spark urgent action on AMR, it represents a chance to learn about international agenda-setting rhetoric in a UN context. In 2024, the UN General Assembly held a second high-level meeting on AMR and issued a new declaration on AMR. The shifts in global conversations and policy actions from the 2016 declaration, to the IACG's 2019 publication, to the 2024 declaration provide an opportunity to learn about how the report reflected and shaped policy discourse over time.

Approach Strengths and Limitations

Every research approach involves trade-offs, and this study is no exception. My approach to textual-intertextual analysis of multiple case studies provides several key strengths for investigating my research questions, including its timeframe, scope, and learning opportunities. First, by focusing the timeframe on reports published between 2014 and 2019, I was able to trace rhetorical and policy impacts over a medium- to long-term period while still engaging with living authors who remembered writing the texts. Striking this balance is particularly important in public policy, where the effects of persuasive documents — especially those related to complex issues like AMR — often take years to materialize.[148] Second, investigating three cases enhanced my ability to generate meaningful comparisons and theoretical insights while keeping the project scope manageable. Including multiple cases allowed me to explore both commonalities and differences in how rhetorical strategies functioned in different AMR policy situations. This design helps me make claims about strategies that extend beyond a single case, while ensuring that my analysis remains sensitive to the particular nuances of each case. Third, focusing on relatively successful cases allowed me to learn about rhetorical strategies that appeared to work

[148] Asen, "Reflections on the Role of Rhetoric in Public Policy"; Rude, "Toward an Expanded Concept of Rhetorical Delivery"; Weible and Sabatier, *Theories of the Policy Process*.

well over time. Studying these cases enabled me to examine rhetorical strategies that yielded observable impacts, which can inform future policy communication strategies. At the same time, I do not assume that every choice made in these texts was ideal; rather, I highlight rhetorical moves that seemed to contribute to their effectiveness.

As I built each case database, it became clear that there were many more interconnections between cases than I initially realized. For example, CSE leader Sunita Narain ended up also sitting on the IACG. O'Neill report contributor Kitty Healey also attended CSE's workshop to contribute. AMR policy champion Sally Davies was key to initiating the O'Neill report, and served as a co-convener for the IACG report. These and many more overlaps between the people and events of each case preclude tidy separations, which might be seen as a limitation in some research paradigms. Unlike an experimental comparison aiming to generate abstract, generalizable knowledge (where overlaps between the cases might be analytically detrimental), the interconnections between these case studies offer additional opportunities to observe the real-world complexity of rhetoric across the cases and can mutually enrich understandings of the cases involved.

This study's approach does entail several limitations, however. While the interviews provided valuable additional information, they ultimately reflected individual recollections shaped by subsequent experiences. As a result, interviewees' retrospective responses reflect their views years after the report's publication, and therefore may not capture their perspectives at the time of writing. Additionally, because I conducted non-anonymous interviews, I may have missed perspectives from individuals unwilling to comment publicly. However, this tradeoff was necessary because providing anonymity would have made it challenging to meaningfully report interviewee perspectives in relation to the specific reports they discussed.

By focusing on successful reports, I did not examine cases of rhetorical failure. Much could be learned from reports that were ineffective in various ways — for example, those that failed to gain traction, provoked pushback, or stirred controversy. In this project, I focused on relatively successful reports. Since no text is rhetorically perfect, even successful reports can offer insights into both effective and ineffective strategies. Future studies could focus specifically on less successful cases. Additionally, by focusing on English-language texts, my dissertation does not speak to the diversity of rhetorical practices in non-English policy communication. Since AMR is a global issue, persuasive strategies may function differently across linguistic and cultural contexts, and future research should include more languages.[149]

The timeframe of my study, while ideal for observing medium-term policy impact, meant that I could not conduct ethnographic observations of writing and reading practices at the time of publication. Such real-time observations could have offered deeper insights into the rhetorical dynamics surrounding the reports. However, given my interest in longer-term rhetorical effects, prioritizing a broader historical perspective was a worthwhile tradeoff. Another contextual limitation is that all anchor texts were published before the COVID-19 pandemic, which significantly altered public health communication. The rhetorical strategies I observed in these cases should therefore be read as historical lessons rather than direct models for present-day communication. The pandemic reshaped global health discourse, changing the urgency and framing of issues like AMR. Nevertheless, studying texts published in a pre-pandemic context still provided valuable insights into rhetorical strategies that have relevance in post-pandemic policy discourse. Recognizing the strengths and limitations of this research approach helps to contextualize its findings and contributions within rhetorical and public policy studies.

[149] Ledingham et al., "Antibiotic Resistance: Using a Cultural Contexts of Health Approach to Address a Global Health Challenge"; Will and Kamenshchikova, "From Universal Frames to Collective Experimentation?"

Chapter 3. Credible Intermediaries: Strategies for an *Ethos* of Interactional Expertise

Introduction

From diverse fields and decades of study, we know intermediaries play an undeniably important role at the interface of science and policy.[150] Here, I define intermediaries situationally, as the individuals, teams or organizations functioning as go-betweens for at least two communities of actors for mutual benefit.[151] I focus specifically on intermediaries playing an "active role as catalysts for research use between research producers and users" in public policy settings.[152] A large and growing body of interdisciplinary research has investigated different aspects of intermediaries, including their various roles, competencies, goals, skills, organization structures, and expected outcomes.[153] This literature has also described facilitators of intermediaries' success, such as being seen as relevant, clear, credible and legitimate — among many other things.[154]

Despite the importance of intermediaries, there has been less academic focus on their communication practices, and very little research to date has taken an explicitly rhetorical approach to study how intermediaries operate persuasively. Drawing on theories and well-

[150] Neal, Neal, and Brutzman, "Defining Brokers, Intermediaries, and Boundary Spanners"; Gandara, Rippner, and Ness, "Exploring the 'How' in Policy Diffusion"; Isett and Hicks, "Pathways From Research into Public Decision Making"; Bednarek et al., "Science-Policy Intermediaries from a Practitioner's Perspective."
[151] While I opt to use the term intermediary in this chapter, the research literature features many other terms to convey the same or similar concepts. For example, Bednarek et al. define the practice of *boundary spanning* as "work to enable exchange between the production and use of knowledge to support evidence-informed decision-making in a specific context" and boundary spanners "as individuals or organizations that specifically and actively facilitate this process." For Bednarek et al., "knowledge production and use are not immutable categories; individuals and organizations can play multiple or shifting roles in producing or using knowledge within the same process (e.g., a decision maker who uses research in their decision-making could also provide knowledge about an issue)." Based on this definition, boundary spanners could be considered synonymous with intermediaries as defined in this chapter. "Boundary Spanning at the Science–Policy Interface," 1176.
[152] Breckon and Boaz, "Evidence Intermediary Organisations: Moving beyond a Definitional Morass."
[153] Torres and Steponavičius, "More Than Just a Go-Between"; Neal, Posner, and Brutzman, "Understanding Brokers, Intermediaries, and Boundary Spanners."
[154] Cash et al., "Knowledge Systems for Sustainable Development"; Sarkki et al., "Balancing Credibility, Relevance and Legitimacy"; Neal, Posner, and Brutzman, "Understanding Brokers, Intermediaries, and Boundary Spanners."

established work from rhetoricians can enrich the existing literature on intermediaries, by helping to not just describe but also explain important communication dynamics at play. This chapter pairs the rhetorical concept of *ethos* with insights from expertise studies to analyze questions of intermediary persuasion across the three cases studies. *Ethos* provides a time-tested framework to interpret how intermediaries can build credibility, while expertise studies offer concepts to characterize different types of expertise and better understand their rhetorical implications. Together, these perspectives enable a nuanced examination of how intermediaries position themselves as credible report-writers at the interfaces of science and policy.

Ethos in Rhetoric

In defining rhetoric as an "ability, in each particular case, to see the available means of persuasion," Aristotle offered three possible types of persuasive appeals: *ethos* (character of the speaker), *pathos* (emotions in the audience), and *logos* (logical argument).[155] They all combine to persuade. Of the three, however, Aristotle notes of *ethos* that, "character is almost, so to speak, the controlling factor in persuasion."[156] Rhetorical *ethos* is about the persuasive appeal of a rhetor's character and how this character is established by means of the text or speech. More than static source credibility, *ethos* is about the interaction of a rhetor's performance in the moment with her pre-existing reputation. So, *ethos* cannot be defined simply as credibility — it is also about how a rhetor constructs and presents their credibility publicly. Within *ethos,* Aristotle gives us another triad of ways a speaker's character can be persuasive: *phronēsis* (practical wisdom), *aretē* (virtue), and *eunoia* (good will). He argues that speakers seeming to have all these qualities are necessarily persuasive to their audiences.[157]

[155] Aristotle, *On Rhetoric*, 14.
[156] Aristotle, 38.
[157] Aristotle, 121.

Ethos has remained an essential concept in rhetoric since classical times, because an audience's interpretation of a message is always affected by their perception of the message's source or speaker.[158] Some variations or additions to *ethos*' three components have been proposed over time (e.g., considering expertness, trustworthiness, intention toward the receiver, competence, sociability, extroversion and composure as part of *ethos*).[159] But, through thousands of years of study of human communication, the core concept of *ethos* has held up as a practical and useful idea to understand and explain successful persuasion.

Scholars in rhetoric have used *ethos* productively to examine the persuasive communication of various experts, including scientists and policymakers. In her study of expertise, Johanna Hartelius scrutinized different experts' persuasive communication and clashes across different contexts, including policy debates.[160] She used *ethos* as one of her central concepts to distill six "congruities" — rhetorical patterns all experts must do to be seen as experts. Lynda Olman has illuminated various *ethos*-related elements of scientists' communication, including how environmental scientists encounter "fractured" *ethos* problems when advising policymakers, and tracing how scientists can deploy an *ethos* of prophets.[161] Carolyn Rude has used *ethos* to analyze how a science organization engaged in impactful environmental advocacy and policy reporting.[162] These rhetoricians and many others have considered not only the *ethos* of scientists talking to other scientists, but also what happens when they move out of their technical communities and aim to persuade in the public sphere.[163] Studies

[158] Baumlin and Meyer, "Positioning Ethos in/for the Twenty-First Century"; Hyde, *The Ethos of Rhetoric*; Sattler, "Conceptions of Ethos in Ancient Rhetoric"; Hartelius, *The Rhetoric of Expertise*.
[159] McCroskey and Young, "Ethos and Credibility."
[160] Hartelius, *The Rhetoric of Expertise*.
[161] Walsh, *Scientists as Prophets*; Walsh, "Before Climategate."
[162] Rude, "Environmental Policy Making and the Report Genre."
[163] Archer, "Understanding the Rhetorical Dynamics of Expertise Amid a Manufactured Controversy"; Ceccarelli, *On the Frontier of Science*; Mehlenbacher, *On Expertise*.

of alternative, non-traditional and various "pseudo-" expert rhetoric has further enriched our understanding of ways rhetors seek credibility in public debates.[164] Together, this work emphasizes that *ethos* is a particularly important concept for expert communication on public issues characterized by uncertainty and complexity — such as policymaking on AMR. Analyzing the rhetorical markers of *ethos* can help us find ways that intermediaries in the three cases were able to establish credibility with their various audiences.

However, attention to *ethos* immediately highlights a puzzle for intermediaries. By definition, intermediaries work *between* rather than *within* different communities. While these teams, individuals, or organizations might very well be experts in their own given area(s), when serving in an *intermediary* role, they occupy a middle space without membership in the communities they serve. An intermediary functions as a go-between for communities of policymakers and scientists, without being themselves an expert policymaker or scientist. In so doing, successful intermediaries need to establish credibility with multiple communities. This suggests intermediaries may have markedly different rhetorical resources and challenges than the scientists, political, and alternative experts studied so far.

Based on what we know about rhetoric and the goals of the intermediaries' reports, we expect to find appeals to *ethos* in the texts, based on good will, goodness, and good sense (i.e. *eunoia*, *aretē*, and *phronēsis*). The question is then not *whether* intermediaries make these appeals in their texts, but *how* — especially considering their position as rhetors in the cases. Without traditional claims to expertise, on what grounds can intermediaries argue anyone should listen to them as credible sources? What specific rhetorical appeals to *ethos* are deployed in their

[164] Mehlenbacher, "Hacking Science: Emerging Parascientific Genres and Public Participation in Scientific Research"; Shew, "The Food Babe Fearmonger: Transcending Spheres of Argument through the Dual Use of Personal and Pseudo-Technical Expertise."

texts, and to what discernable effects? Further, how might intermediaries' appeals to *ethos* be similar to or different from rhetorical strategics identified in existing work on the rhetoric of expertise? Pairing the rhetorical concept of *ethos* with insights from interdisciplinary studies of expertise can provide additional theoretical insights to address these questions.

Interactional Expertise

The concept of interactional expertise was proposed by Harry Collins and Rob Evans as part of a project to help "make decisions about who counts as an expert and who does not" for technological disputes in the public domain.[165] As sociologists working in Science and Technology Studies, Collins and Evans sought to define, demarcate, and test whose expertise is trustworthy in public debates. Considering the separation of language and practice and building on theories of tacit and lay expertise, they developed the paired concepts of "interactional experts" and "contributory experts."[166]

Contributory expertise is defined as the ability to actively participate in and contribute to a specific field of study or practice. Contributory experts have both the theoretical knowledge and practical skills needed to advance knowledge within their domain. In other words, they can "walk the walk" as well as "talk the talk." They have tacit knowledge gained through immersive experience in their field.

In contrast, interactional expertise is the ability to master the language and conceptual understanding of a specialist domain, without having practical experience in that domain. Interactional experts can "talk the talk" fluently but lack the skills to "walk the walk" in hands-on practice. Interactional expertise is acquired through "linguistic socialization" with

[165] Collins and Evans, *Rethinking Expertise*, 133.
[166] Collins and Evans, "The Third Wave of Science Studies"; Collins et al., "Experiments with Interactional Expertise"; Collins and Evans, "Expertise Revisited, Part I—Interactional Expertise"; Polanyi, *The Tacit Dimension*; Wynne, "Knowledges in Context."

contributory experts.[167] Collins and Evans propose that interactional experts can engage in meaningful conversations with contributory experts and understand the nuances of a given field, but cannot actually contribute to that field's advancement. A foundational example came from Collins's fieldwork with gravitational wave physicists — he could speak fluently on the subject as an interactional expert, but could not perform actual physics experiments as a contributory expert. Ultimately, an interactional expert may pass as a true contributory expert in conversation, but would be found out in practice.

Since Collins and Evans proposed their definition of interactional expertise, many other scholars have used, extended, and challenged concept.[168] For example, some argue that interactional experts *can* contribute to specialist fields substantively and with authority — based on empirical research on groups including journalists, facilitators, and HIV/AIDs patient-activists.[169] A growing literature has studied interactional experts' motivations, processes of expertise acquisition, and theoretical and observed contributions, as well as issues of embodiment and tacit knowledge, and how to best identify and evaluate interactional expertise.[170] Research on the specific concept of interactional expertise also overlaps with broader studies of *process* and *facilitation* experts, and connects to work on process expertise in policymaking contexts.[171] This literature highlights how domain experts can be ill-equipped to coordinate their knowledge with others and emphasizes the value of skilled process facilitators to

[167] Collins, "Interactional Expertise as a Third Kind of Knowledge."
[168] Goddiksen, "Clarifying Interactional and Contributory Expertise."
[169] Selinger and Mix, "On Interactional Expertise"; Reich, "Journalism as Bipolar Interactional Expertise"; Barley, Treem, and Leonardi, "Experts at Coordination."
[170] Caby, "Techniques for Overcoming Difficult Interdisciplinary Dialogue in Expert Panels"; Kennedy, "Why They've Immersed: A Framework for Understanding and Attending to Motivational Differences Among Interactional Experts"; Plaisance, "The Benefits of Acquiring Interactional Expertise"; Plaisance and Kennedy, "A Pluralistic Approach to Interactional Expertise"; Ribeiro and Lima, "The Value of Practice: A Critique of Interactional Expertise"; Goddiksen, "Clarifying Interactional and Contributory Expertise."
[171] Molinengo, Stasiak, and Freeth, "Process Expertise in Policy Advice"; Barley, Treem, and Leonardi, "Experts at Coordination"; Cravens et al., "Science Facilitation."

coordinate between such domain experts. Although using different terms, studies of process and facilitation experts raise similar questions about the credibility of those who successfully coordinate between different domains while lacking subject-matter knowledge in those areas. Animated by these ongoing debates, the concept of interactional expertise is a useful one to consider when coming to understand the *ethos* of intermediaries.

Using the concept of interactional experts helps clarify the specific *ethos* developed in the cases by orienting us to concerns of what type of expertise intermediaries may have. However — as with the academic literature focused on intermediaries — few studies so far have focused on interactional experts' communication, or taken a rhetorical approach to investigate their persuasive efforts. In what follows, I discuss two key strategies that were deployed to develop report authors' *ethos*, first by examining the way they came up with things to say in that intermediary space, and then by examining the specific virtues they appealed to when establishing their *ethos*. Textual-intertextual analysis reveals that the authors in these cases successfully appeal to a distinct *ethos of interactional expertise*, by performing a participatory invention process and by rhetorically resolving situational tensions with a signature mix of virtues.[172]

Strategies for an *Ethos* of Interactional Expertise

Performing an Extended Invention Process that Engages Diverse Communities

All three final reports include commentary about their creation. The CSE report opens explaining that its guidance "is based on expert inputs and deliberations" at an international workshop.[173] The O'Neill report's executive summary also starts with a note on process, writing

[172] Classical rhetoric has five major categories, or "canons" — invention, arrangement, style, delivery, memory. The canons can be used to guide rhetorical education and as analytical tools for rhetorical criticism. In rhetoric, invention concerns how a rhetor finds something to say on a given topic, encompassing both the content of communication and the process of its creation.
[173] "CSE Report," 2.

that, "Following 19 months of consultation and eight interim papers…this report sets out the Review on Antimicrobial Resistance's final recommendations to tackle AMR."[174] The IACG report dedicates its second section to describing the "Process of developing the IACG recommendations," enumerating various meetings, deliberations, consultations, engagement, and mapping activities undertaken.[175] Additionally, all three reports cite a mix of academic and grey literature expert sources throughout.

None of these observations is surprising given what we know about *ethos*, expertise, and report-writing. In her studies of experts' rhetoric, Hartelius has explicated how all experts need to provide evidence of a *techne* — an epistemology and methodology — because expertise is publicly conceptualized as the product of a special, systematic practice.[176] Hartelius has also argued that all experts must rhetorically situate themselves within a network of expertise, associating and dissociating with other experts to borrow cultural capital through "informal modes identification and division."[177] Hartelius' rhetoric-based observation aligns with extensive research across fields — including applied linguistics, technical communication and English — which explores citation practices and various ways citations can serve to bolster credibility.[178] Broadly, we know that speaking to methodology and demonstrating associations are conventional and cardinal moves to help rhetors establish credibility as experts.

However, comparison across the cases reveals two less expected moves for policy reports with implications for intermediary *ethos*. First, each report is situated within web of publicly available "production texts" that display aspects of its creation — the intermediaries in these

[174] O'Neill, "Tackling Drug-Resistant Infections Globally: Final Report and Recommendations," 4.
[175] "No Time to Wait," 3–4.
[176] Hartelius, *The Rhetoric of Expertise*.
[177] Hartelius, 164.
[178] Hyland, "Self-citation and Self-reference"; Karatsolis, "Rhetorical Patterns in Citations across Disciplines and Levels of Participation"; White, "Citation Analysis and Discourse Analysis Revisited."

cases do not only tell readers about their process, they also show it. Second, that creation process is distinctly participatory, demonstrating that the intermediaries engaged various communities to create their reports. Together, I argue these moves constitute one effective rhetorical strategy to build intermediary *ethos*. In these cases, performing what scholars of rhetoric would call an *extended invention process* that demonstrates engagement across multiple communities enables intermediaries to appeal to *ethos* in ways that establish them as credible interactional experts.

Performing an Extended Invention Process

In each case, the final report is published alongside a web of other, related texts on a website or webpage. These additional materials serve as artifacts of the rhetorical invention process. The O'Neill review's website hosts their series of eight interim reports — each published with their own supporting documents — alongside press releases, media articles, background and team information. The IACG web section also featured interim "discussion papers" on various topics, the initial draft of the final report, and hundreds of pages of public written comments. CSE houses its final report on a multi-media webpage, including the presentations and background materials that informed its creation, its press release and videos from contributing experts. Each webpage situates the final report alongside ample evidence of its invention process.

Non-negligible time and resources were required for the intermediaries in these cases to publicly chronicle their invention process in this way. Publishing interim texts also presents many potential rhetorical downsides. Doing so could make the final reports seem less decisive and potentially less persuasive. Sharing tentative ideas before they are refined could create more opportunities for conflict and disagreement. As O'Neill Report team lead Hala Audi noted,

"there's a culture in government of being really careful of releasing analysis and report before it's final," because of concerns of unfinished documents being critiqued by the opposition or covered by media before they are ready.[179] In many policy report contexts, it is not common practice to share pre-publication drafts or discussion papers ahead of a final report.

Considering *ethos* helps us better explain the rhetorical benefits of publishing the final report alongside evidence of its invention, by showing this to be a strategy to strengthen appeals to the authors' credibility as interactional experts. Performing their invention process is an effective way for intermediaries to "show their work" and to prove that they have acquired interactional expertise through sufficient linguistic socialization over time. Publishing the final reports against a backdrop of past work also offers a convenient balance for intermediaries who need to convey a sense of this robust learning process, without overloading their busy readers with detailed descriptions of the process in the final reports. For example, after a short section summarizing the IACG's process, the authors point readers to the webpage for more: "Further information on the IACG process and relevant materials, including the written submission received, are available on the IACG website."[180] Being able to point readers to these available materials helps the authors build their *ethos* efficiently, by enabling them to assert a rigorous invention process without needing to expound that process within their final reports.

When writing the final reports, having public invention texts also enables intermediaries to cite their own past work alongside expert sources, effectively putting themselves on the same level as others with well-established expertise. For example, the IACG report's reference list includes all six of its discussion papers, in addition to reports from the Organization for Economic Cooperation and Development (OECD) and World Health Organization (WHO), and

[179] Hala Audi, interview with the author Oct. 17, 2023.
[180] "IACG Report," 4.

scientific articles from journals such as *The Lancet,* and *Nature Climate Change.*[181] The O'Neill report similarly cites its own interim reports and supporting documents in footnotes along with reports from institutions such as the WHO and peer-reviewed articles from high-impact journals. The CSE report takes the same strategy, albeit on a smaller scale, citing a process document created to support its development in its reference list, along with other authoritative reports and scientific papers.

The intermediaries could have made other rhetorical choices regarding their invention process. They could have gone through the same processes but opted to keep all interim materials for internal use only, not to be published or cited in the final report. Conversely, they could have also published much *more* evidence of their invention processes. Interviews with authors reveal each intermediary team had copious invention texts they could have published, but did not — notes, meeting minutes, responses to feedback, interview transcripts, meeting agendas, and more.[182] Those unpublished texts emphasize the *rhetorical* element of this strategy. Curation is key. The goal is not to publish everything possible from an intermediary's invention process, but just enough to evoke an impression that a credible process happened. It makes sense that intermediary authors need additional texts to demonstrate their acquisition of interactional expertise and effectively create a sense of *techne*. These cases show that intermediaries do not need to publish everything they did to the highest fidelity possible in order to convey that an invention process happened. As interactional experts rather than contributory experts, the onus is on intermediaries to demonstrate sufficient interaction has occurred in order to be perceived as credible. Gesturing toward a substantial, but curated, set of materials that led to the final report

[181] "IACG Report," 25.
[182] Interviews by the author with: Anthony McDonnell, Sept. 26, 2023; Rajeshwari Sinha, Sept. 21, 2023; Haileyesus Getahun, Sept. 11, 2023.

serves that function. In addition to the existence of such materials, the nature of those interactions is important. Considering details of how the invention process is performed uncovers a second essential component: the performed invention process must also demonstrate close, sustained engagement with a wide range of expert and stakeholder communities.

Engaging Across Multiple Communities and Types of Expertise

Experts can borrow from others' credibility by rhetorically performing their associations and connections.[183] This happens in each case study, where the intermediary authors cite high-impact scientific articles and influential reports from well-known organizations. Expert association is also apparent on their acknowledgment pages, where those who contributed are named and listed with their academic credentials, job titles, and organizations. To rhetorically associate with a network of expertise is a well-known and straightforward strategy: build your credibility by associating with credible experts.

These cases, however, suggests that intermediaries aiming to bolster their distinct *ethos* should go beyond mere association with contributory experts, by further demonstrating that their invention process involved *active dialogue* with the multiple communities for whom they serve as go-betweens.

The O'Neill report authors invite and document this kind of engagement throughout their interim reports, consistently describing their work as an ongoing discussion and inviting readers to participate. For instance, an interim report on drug development and financial models explains: "We would like this document to stimulate a discussion around the models that could be used to successfully reinvigorate the antibiotics pipeline. We would welcome feedback and discussions with interested parties who can help us build on this work, ahead of our final

[183] Hartelius, *The Rhetoric of Expertise*.

recommendations by the summer of 2016."[184] The O'Neill report author team invites engagement, then signals this engagement has happened in the final report by acknowledging the more than 130 individuals and organizations that contributed. The team emphasizes ongoing engagement with experts by dividing their acknowledgement list, first thanking those who contributed to the final report only, then writing "we would like to renew our acknowledgements of all those individuals and institutions who have contributed to our reports in the past as well as this final report."[185]

Similarly, the IACG's interim documents are literally titled "discussion papers." These discussion papers they invite input by posing specific questions for readers to answer. Each IACG discussion paper begins with a disclaimer emphasizing the provisional nature of the document — it only reflects discussions so far, and is "subject to change as discussions continue."[186] The IACG received and published hundreds of pages of responses from countries, organizations, associations and individuals.[187] The group also published a summary of its engagement events, noting that stakeholders attending the meetings commended the IACG's engaged approach of "seeking feedback from a wide range of constituencies before the finalization of the IACG report and recommendations."[188] In the final IACG report, the process of developing recommendations is characterized by its deliberations, public consultations, targeted outreach, and "a wide range of stakeholder engagement activities."[189]

[184] O'Neill, "Securing New Drugs for Future Generations: The Pipeline of Antibiotics," 29.
[185] O'Neill, "Tackling Drug-Resistant Infections Globally: Final Report and Recommendations," 77.
[186] IACG on AMR, "Future Global Governance for Antimicrobial Resistance: IACG Discussion Paper."
[187] IACG on AMR, "Comments Received on Draft IACG Recommendations 29 January – 19 February 2019"; IACG on AMR, "Comments Received on the First Set of Discussion Papers Informing the Report of the UN Interagency Coordination Group on AMR to the UN Secretary-General"; IACG on AMR, "Comments Received on the Second Set of Discussion Papers Informing the Report of the UN Interagency Coordination Group on AMR to the UN Secretary-General."
[188] Interagency Coordination Group on Antimicrobial Resistance, "Shaping the Future Agenda on Antimicrobial Resistance Discussion with Stakeholders on the Draft IACG Recommendations," 2.
[189] "IACG Report," 3.

For the CSE report, the text is described as the result of expert inputs and deliberations to collaboratively develop guidance, with the experts acknowledged as contributing through presentation and/or deliberation — this serves to convey the interactive nature of their participation. Reflecting on the process, CSE report project lead Rajeshwari Sinha noted how engaging a range of experts increased pre-publication interest in the report and built CSE's credibility in the process: "During the meeting, stakeholders from India came to know CSE was doing something on AMR, and saw this is an international-level meeting, with many good people coming…So there was some buzz already within the Indian network that some constructive output is being worked upon, which the government can use." Inviting a diverse range of experts to contribute to the report — and, documenting that engagement process via interim texts and the report itself — helped to increased CSE's *ethos* as an interactional expert source for recommendations on national AMR policy.

Existing literature has shown that engagement and co-production practices can provide many potential benefits for mobilizing evidence in policy, but that these participatory practices can also present significant challenges and require substantial time and resources.[190] The concepts of *ethos* and interactional expertise can help unpack why intermediaries in these cases benefited from both creating and performing an active and dialogue-focused invention process.

The intermediary authors had many other rhetorical options for how to create their reports. They were not required to engage broadly, or to publicly share consulted stakeholders' names and other evidence that engagement had happened. They could have done no engagement at all. Or — if they felt engagement was crucial to their own learning — they could have

[190] Bandola-Gill, Arthur, and Leng, "What Is Co-Production?"

engaged behind closed doors without documenting and demonstrating in their report texts that conversations had indeed happened.

Instead, the text of each report highlights the active contributions from multiple communities and different types of expertise. The O'Neill report, for instance, opens sections with quotes from a range of experts, including their voices as integral introductions to the report's recommendations. (See Figure 1). The O'Neill report includes "pull-quote" formatting throughout, to highlight key points from the main text in larger font. The effect of experts' quotes alongside pull quotes from the report conveys a sense of active conversation between the authors and diverse experts.

Figure 1. Opening quotes from contributing experts

The concept of interactional expertise helps explain why these performances of active engagement are necessary. If one becomes an interactional expert through linguistic socialization among practitioners, then we can understand that both doing the linguistic socialization and proving it happened are essential elements of an intermediary's *ethos* appeals.

Further, considering *eunoia* helps theorize why the texts' engagement process connects to *ethos*. Often translated as goodwill or friendliness, *eunoia* can denote both the goodwill of the speaker to the audience, and the goodwill an audience feels towards a speaker. Aristotle suggests

the performance of friendly gestures by the speaker towards the audience can generate credibility. In these reports, the emphasis on dialogue and engagement demonstrate the intermediaries' friendliness and gratitude toward the many people and communities they engaged. IACG secretariat director Haileyesus Getahun felt strongly that a participatory process increased the credibility of the report among those engaged, explaining "If people participate at the initial stages and if they feel that they contributed, once you finalize [the report], their ownership is high…that's because we present the recommendations, we get feedback and then we come back, and modify, and say: 'look, this was your feedback, this is how we addressed it' to show it was a very iterative, continuous process."[191] For Getahun, being able to demonstrate the participatory, engaged nature of the invention process was a valuable rhetorical strategy to increase the IACG's *ethos* as an intermediary source. IACG secretariat team member Ian Grubb felt similarly, noting that — coming from a group such as IACG with no formal authority and a temporary mandate — the ultimate success of the report "really depends upon the legitimacy of the process that was followed, and I think that legitimacy was enhanced by the consultative elements."[192] For an intermediary group, demonstrating an actively engaged invention process is one tool to enhance the legitimacy of their outputs.

Effective engagement offers many benefits beyond its persuasive, rhetorical potential. These cases align with interdisciplinary research emphasizing how various kinds of engagement can build relationships and cultivate interpersonal trust.[193] Practically, engagement can improve the quality of the reports' contents (e.g., increasing suitability, accuracy, comprehensiveness). Engagement can also provide opportunities for a sort of audience testing, for authors to check

[191] Haileyesus Getahun, interview with the author, Sept. 11, 2023.
[192] Ian Grubb, interview with the author, Sept. 27, 2023.
[193] Knowles et al., "More than a Method."

how recommendations resonate with different audiences before publishing a final report. While this chapter focuses on how intermediaries rhetorically build *ethos*, the cases also suggest that publishing interim reports — performing an invention process — can offer practical, strategic benefits beyond the rhetorical. For example, interim reports can create more opportunities to get key messages in front of audiences. O'Neill explained one of the team's goals of publishing of interim reports was to strategically maintain media presence: "I made a conscious effort that along the journey…we would periodically publish specialist papers in the different areas that we thought were important so that we could keep a narrative in with the media."[194] Interim reports can thus were able to stimulate policy discussion and action before the final O'Neill report was published.

But for the rhetorical focus of this study, the choice to not just conduct but to *perform* an actively-engaged invention process in the report text can help intermediaries to boost credibility and thus enhance persuasiveness. These cases offer several concrete examples of how intermediaries can enact this strategy, such as citing interim texts and a webpage/site with additional details, quoting those engaged, and emphasizing "dialogue," "discussion," and "deliberation" as process keywords throughout the interim and final reports.

No one rhetorical strategy alone can be credited for any text's success. Yet, available reception evidence suggests that performing an extended, engaged invention process is a promising way for intermediaries to appeal to *ethos*. For example, the UN Secretary General's official response to the IACG report highlights that "The recommendations of the coordination group were informed by consultations with multiple stakeholders, the public and various

[194] Jim O'Neill, interview with the author, Sept. 6, 2023.

countries," before summarizing the recommendations and noting their importance.[195] Similarly, *The New York Times'* coverage of the IACG report launch notes the authoring group is "a collaboration of public health experts, government ministers and industry officials" that "spent two years working on the report."[196] The reporter mentions the group's duration and composition as expository points to contextualize who they are and why they are being quoted as a credible source for the story. Coverage of the O'Neill report mentions its invention process performed invention process (i.e., its interim reports) when introducing the report in connection with its credibility as a thorough source, with statements such as: "The scope of that problem is clear in O'Neill's final report, which launches today on the back of eight earlier interim publications. It is as thorough a review of the problem of drug-resistant infections as currently exists."[197] Commentary from key target audience members suggests the O'Neill report's invention process was perceived as thorough and its intermediary authors accepted as credible leading up the final report. For example, UK Member of Parliament George Freeman emphasized the process in a government debate, noting it had "run for two years" and had already "made a comprehensive and highly informed assessment of the AMR challenge" with its "authoritative and readable" interim publications. Before the final report was even published, the performed invention strategy was helping to bolster the *ethos* of its intermediary authors as interactional experts.

Although engagement requires significant resources and can have potential downsides, performing an engaged invention process seems to be a worthwhile choice for intermediaries in these cases seeking to appeal to an *ethos* of interactional expertise. In addition to performing

[195] "Follow-up to the Political Declaration of the High-Level Meeting of the General Assembly on Antimicrobial Resistance Report of the Secretary-General," 21.
[196] Jacobs, "U.N. Issues Urgent Warning on the Growing Peril of Drug-Resistant Infections."
[197] Yong, "The Plan to Avert Our Post-Antibiotic Apocalypse."

their engaged invention process, intermediaries can make specific rhetorical choices in their writing to strengthen their appeals to *ethos* as interactional experts.

Enacting Signature Virtues to Resolve Situational Problems

At some point in the invention process, intermediaries need to write the words of their final report. While crafting any text, writers encounter myriad choices, including length and arrangement, style and tone, sentence structure and word selection. Using the concept of *ethos* to consider these text-level choices illuminates the ways intermediaries create a sense of "who" is speaking in the report and why readers should listen. Textual-intertextual analysis reveals that — despite differences in authorial voice — the writers in the case studies rhetorically enact common virtues that appeal to an *ethos* of interactional expertise by addressing problems inherent to their intermediary situations.

Attending to Differences in Authorial Voice

Voice is a multifaceted idea across academic disciplines including English, rhetoric, applied linguistics and anthropology.[198] Here, I define voice broadly as the way authors present themselves in a text, using a constellation of style, tone, personality, vocabulary, and syntax. At first glance, it is immediately apparent the reports in these three cases represent different approaches to authorial voice.

The O'Neill report deploys a highly present, active, and conversational voice with frequent use of first-person pronouns. Throughout, the report uses "we" and "our" to describe the thoughts and actions of the writing team, for example, "**We** have followed six simple guiding principles, of equal importance, to develop **our** package of recommendations across 10 areas."[199]

[198] Ivanič, *Studies in Written Language and Literacy*; Hyland, "Disciplinary Voices"; Matsuda and Tardy, "Voice in Academic Writing"; Geertz, *Works and Lives*.
[199] O'Neill, "Tackling Drug-Resistant Infections Globally: Final Report and Recommendations," 15.

The O'Neill report also deploys a collective, societal "we" often, throughout its recurring section headings (e.g., "Why we need to act" and "What we need to do") and recommendations (e.g., "we must reduce the demand for antimicrobials"). Sometimes, the report features both the first-person and collective "we" in one sentence, for instance: "**We** *[the review team]* estimate that by 2050, 10 million lives a year and a cumulative 100 trillion USD of economic output are at risk due to the rise of drug-resistant infections if **we** *[as a collective global society]* do not find proactive solutions now to slow down the rise of drug resistance" (emphasis added).[200] For the O'Neill report authors, these choices worked well in their context. With chair Jim O'Neill as a willing and able spokesperson, the conversational tone and strong author presence are effectively congruent with his personal voice in media interviews, presentations, and government testimonies.

In contrast, the IACG report never uses first-person pronouns or "we" in a collective sense. Instead, the report text describes the group as an "it." For example, "In the course of developing **its** recommendations, the IACG was guided by the following principles…" and "In the course of **its** deliberations, the IACG analysed critical issues" (emphasis added).[201] The text describes the IACG's recommendations using the formal style and conventions typical of UN resolutions and declarations.[202] The IACG *calls on* various groups (e.g., Member States) to various take actions, and it further *recognizes, emphasizes, notes, underlines, acknowledges, reiterates, recommends, urges, highlights, requests, applauds*, and *proposes* various considerations for action. The authorial voice is one of an objective reporter documenting a group's pronouncements. This type of writing has been termed as using an "invisible" or

[200] O'Neill, 4.
[201] "IACG Report," 3, 9.
[202] Dontcheva-Navratilova, *Analysing Genre*; Chakroun, "A Critical Discourse Study of Decision Making during the Drafting Process of UNSC Resolutions"; Gruenberg, "An Analysis of United Nations Security Council Resolutions."

"author-evacuated" voice that emphasizes objective reporting without centering the writers' opinions, experiences, or narration.[203] The CSE report deploys a similar authorial voice by speaking impersonally and conveying a sense of the text's contents as empirical and objective. For example, the introduction observes that "Concerted action to address the animal aspects of AMR has been achieved in developed countries," then notes, "In developing countries (mainly [LMIC]), limited action has been observed in case of both animal and environmental aspects."[204] Rather than writing *who* observed limited action, the authors opt for a passive "has been observed" construction. Throughout, the CSE report uses what could be described as a "realist style" that characterizes the writers as clear-sighted, unbiased and frank.[205] This is exactly what the authors aimed to convey. CSE director general Sunita Narain said, "The three principles for us are always: factual, straightforward and hard-hitting…Be factual to maintain your public credibility, be straightforward (cut all the ifs, ands, buts and long sentences), and then be hard-hitting to make sure you are always pushing towards a solution."[206] Except for the one-page forward by a CSE leader, the report text reports on the events of the international workshop without first-person pronouns.

The differences in voice between the reports, however, offer only limited insight into this chapter's animating question of how intermediaries appeal to *ethos.* Instead, we learn only that different approaches can work depending on the situation. If different types of author voices can make the same effective appeals to an *ethos* of interactional expertise, then it seems voice is not a determining factor in more or less successful *ethos* appeals. The factors determining voice choice likely have more to do with context and convention than anything else. For the CSE report, using

[203] Geertz, *Works and Lives*.
[204] "CSE Report," 6.
[205] Markovits, "Economizing Debate," 32.
[206] Sunita Narain, interview with the author, Nov. 8, 2023.

a plain, straightforward voice is in line CSE's commitment to make scientific and technical information accessible for public audiences, and matches the style of the organization's past reports on other topics.[207] For the IACG, it makes sense to match the formal tones and patterns of UN organizations. On the other hand, the O'Neill report's conversational voice matches the personality of its chair, and aligns well with the style of British parliamentary debates and explicit guidance for UK government writing.[208]

Since author voice choices are so heavily influenced by a range of factors and context, "it depends" is the only real answer to questions about the most appropriate author voice to strengthen intermediary credibility. Focusing on differences in voice alone would obscure the deeper similarities in intermediaries' text-level rhetorical choices. Luckily, rhetorical *ethos* offers another way to compare the cases. Whether the intermediaries opt for visibility or invisibility as authors in their texts, they enact a common set of virtues.

Signature Intermediary Virtues

Aretē is one of Aristotle's components of *ethos*, alongside *phronēsis* and *eunoia*. *Aretē* is the "closest measure of a speaker's identity, denoting personal excellence in producing and preserving the ultimate public good."[209] Importantly, classical Greek and Roman rhetoricians saw *aretē* as inextricable from public display — virtue could not be purely private morality, it was a civic identity. Put another way: to have *aretē,* one cannot simply *be* virtuous (as a static or internal state), one must *become* virtuous by embodying virtuous actions in public and enacting qualities associated with virtuosity.[210] From ancient philosophy to modern self-help gurus, hundreds of possible virtues have been proposed, including patience, temperance, truthfulness,

[207] "What Is CSE?"
[208] "Content Design"; "Debates."
[209] Hartelius, *The Rhetoric of Expertise*, 12.
[210] Hawhee, "Agonism and Arete."

courage, magnanimity, solitude, frugality, and humility. But what does *aretē* look like for intermediary teams seeking to make credible policy recommendations on a complex topic?

Comparing the cases reveals the authors rhetorically enact the same three signature virtues, which help establish their credibility as interactional experts by transcending recurring problems inherent to their intermediary situation. In short: the intermediaries convey a virtuosity characterized by inclusivity, transparency, and independence. While other virtues are certainly present, these three emerge as shared and salient across the cases. These virtues also contrast in interesting ways with how contributory experts may typically enact *aretē*. By drawing on their available rhetorical resources and addressing the issues common to their situations, conveying these virtues is a rhetorical strategy that appeals to intermediaries' *ethos* as interactional experts.

Inclusivity

Considering what we know about contributory expert *ethos*, research has highlighted various ways experts can make appeals to credibility by strategically demarcating the boundaries of their epistemic authority — arguing for what they uniquely contribute, the depth and specificity of their knowledge, and why their expertise matters most to the situation at hand.[211]

Intermediaries, however, are called to intervene in situations characterized by inherent, irreducible complexity. For instance, "AMR policy" is so vast and multi-dimensional, no one type of expert or expertise could credibly claim epistemic authority over the entirety of the issue. These types of complex policy issues can create anxiety about the fragmented and siloed nature of modern expertise and breakdowns of common understanding across specialisms.[212] In response, intermediaries can emphasize the unique way their work has brought together and

[211] Archer, "Understanding the Rhetorical Dynamics of Expertise Amid a Manufactured Controversy"; Hartelius, *The Rhetoric of Expertise*; Gieryn, *Cultural Boundaries of Science: Credibility on the Line*.
[212] Prescott, "Planetary Health Requires Tapestry Thinking—Overcoming Silo Mentality"; Gibbons et al., *The New Production of Knowledge*.

integrated *multiple* sources of expertise by enacting the virtue of inclusivity. In the three cases, the virtue of inclusivity encompasses a sense of welcoming engagement with different types of experts and expertise, an open-mindedness to different perspectives, ongoing integration and synthesis of ideas, and taking a holistic, unifying view of the problems and its solutions.

Inclusivity as a virtue emerges as salient across all three cases, and in the final report texts, the interviews, and production and reception evidence. For example, Dame Sally Davies (a "co-convener" of the IACG), has characterized the IACG as needing to operate with a "big tent mentality" and not exclude any communities.[213] She has also described an inclusive perspective essential to problem-solving in the AMR space: "We needed a platform that brought not only the experts and the people doing things together, but brought in the private sector, those who make novel antibiotics or old antibiotics, those who run the food chain, the supermarkets, and importantly, civil society."[214] This drive to seek out and integrate multiple perspectives exemplifies intermediaries like Davies enacting the virtue of inclusivity.

In the IACG report text, group membership is described as heterogeneous, consisting of "representatives of United Nations and multilateral agencies and individuals with expertise across human, animal and plant health, as well as the food, animal feed, trade, development and environment sectors." [215] Then, the report argues for a fundamentally inclusive "One Health" approach to AMR: "Because the drivers and impact of antimicrobial resistance lie in humans, terrestrial and aquatic animals, plants, food, feed and the environment, and are interconnected, a One Health approach is essential to addressing it on multiple fronts." These listings of many types of expertise across multiple sectors accumulate to rhetorically emphasize the inclusivity of

[213] "Call to Action on Antimicrobial Resistance: Post-Event Report."
[214] "Ep 49: Dame Sally Davies & Global Governance. AI for Antibiotic Discovery. Nanomovement Diagnostics."
[215] "IACG Report," 3.

the report. IACG secretariat team member Tim Corrigan explained the group strove to listen and include multiple perspectives: "I think the big challenge of [AMR] is that it's broad. You can see that the [IACG report] recommendations are dense. It's one of these things where you just have to try to get everything in. As best you can, you have to make sure everybody's voice is heard and everyone feels heard."[216] Conveying the virtue of inclusivity appears important move for intermediaries to create persuasive reports.

Reception evidence suggests this virtue of inclusivity is indeed relevant to the IACG's *ethos*. Media articles, for example, often mention the diverse composition of the IACG when introducing it as a credible source. For example, a Heath Policy watch article opens with, "A global group of experts representing animal health, human health, food safety and environmental health is currently deliberating ways to control antimicrobial resistance…Originating from ministries of health around the world, UN bodies, academia and other public organisations these are the members of the UN [IACG]"[217] For intermediaries, demonstrating inclusivity — that multiple perspectives were invited and integrated into their arguments — seems to be an important virtue.

The O'Neill report team similarly emphasized inclusivity as a virtue. The initial interim report opens by highlighting their willingness to engage and include a wide variety of perspectives, writing that, "We approach our goals with a blank sheet of paper and open minds. We want to hear from bright and innovative minds across all countries and disciplines, starting with the hard-earned experience of physicians, healthcare workers and their patients."[218] Report team lead Hala Audi elaborated how inclusivity was vitally important to their work:

[216] Tim Corrigan, interview with the author, Mar. 25, 2024.
[217] Anderson, "Broad Inter-Agency Group Embarks Upon Recommendations For Global Antimicrobial Resistance Policy."
[218] O'Neill, "Antimicrobial Resistance: Tackling a Crisis for the Health and Wealth of Nations," 2.

> There's just no way that a group of four or five people who are all non-specialists are going to do useful work unless we stand on the shoulders of the collective wisdom of this community that has been shouting about AMR for years…And I felt like there was no way we are going to succeed if we work in parallel to and in silos from them. Instead, we need to be the ones who internalize all the great work and knowledge that they have and bring it to the world. And so to do that, we had to meet and network a lot and we listened and learned to get up to speed.[219]

Throughout the final O'Neill report text, the intermediary authors' inclusivity is demonstrated in how they highlight and use expertise from different areas — including scientific, clinical, government, pharmaceutical, and agricultural sources. The report's closing acknowledgments display inclusivity by thanking the "wide range" of individual and organizational contributors, from "from clinical, academic and economic backgrounds," from "international organisations, industry and NGOs" and "many companies, including pharmaceutical and diagnostic companies."[220] In reception evidence, their inclusivity was noted and appreciated. Commenting on the review launch, Laura Piddock, a microbiologist at the University of Birmingham and then-director of Antibiotic Action said: "They've been extremely open-minded, and have sought opinion extensively across the world…they've clearly recognized that this is a global issue and needs global solutions."[221] As an intermediary group tasked with integrating various sources of expertise and communicating the resulting insights to global policy audiences, emphasizing their inclusivity helped the O'Neill team bolster their *ethos* as *interactional experts* worth listening to.

Likewise, the CSE report-writing team sought to infuse and embody inclusivity in their production process, inviting experts from different countries and income levels, plus different sectors and disciplines. The CSE report describes the breadth and diversity of its sources, explaining that the workshop "brought together about fifty global, regional and national experts

[219] Hala Audi, interview with the author, Oct. 17, 2023.
[220] O'Neill, "Tackling Drug-Resistant Infections Globally: Final Report and Recommendations," 76.
[221] Yong, "The Plan to Avert Our Post-Antibiotic Apocalypse."

from governments, inter-governmental organizations and civil society collectively representing human, veterinary and environment sectors." Kitty Healey, an AMR expert with the UK Veterinary Medicines Directorate, was one of those contributors. She recalled appreciating how the CSE team brought together diverse perspectives in the invention process:

> It was collaborative. It didn't feel like [the meeting] had been called with a specific agenda, other than to produce a useful output. There were some really knowledgeable and great contributors there. I remember in particular — because the environment isn't my policy area — I remember discussions with some of the experts on the environment and thinking, gosh, it's all just really different…We're dealing with human health and animal health and the environment…but I think bringing those perspectives together to focus on AMR in agriculture and environment was a useful initiative.[222]

This inclusion and integration of different perspectives was a key goal for the CSE report team, according to project team member Rajeshwari Sinha. Within the workshop, CSE aimed to ensure small groups and discussion activities included a mix of perspectives: "for example, if it was an environment-focused group, we would consciously pick people from the animal and human health sectors to be part of the group, so that they could give their views."[223] Overall, CSE strove to include a mix of perspectives from civil society, national governments, and international organizations — and to demonstrate that inclusion took place.

We can better understand why inclusivity is an important virtue for intermediaries to enact by considering the interrelated components of *ethos*. Inclusivity links to *phronēsis* by evincing that an issue has been considered practically from multiple angles, and has benefitted from the collective wisdom. Inclusivity also ties into to *eunoia*, by demonstrating good will and friendliness towards a broad range of expert communities. As discussed above, intermediaries can enact the virtue of inclusivity through their active dialogue with stakeholders.

[222] Kitty Healey, interview with the author, Mar. 1, 2024.
[223] Rajeshwari Sinha, interview with the author, Sept. 21, 2023.

The policymaking context further accounts for why this virtue of inclusivity is important for intermediaries' credibility. Like intermediaries, policymakers are challenged to consider and synthesize multiple types of expertise relevant to an issue. In evidence and policy research, this reality has led to a shift away from conceptualizing policy as "evidence-*based*" and towards a sense of policy as "evidence-*informed*," to better reflect that scientific research evidence is only one of many inputs to the policy process. For policymakers operating in democracies, core democratic ideals include supporting pluralistic systems of political parties and organizations, and free pluralistic media.[224] Policymakers are then tasked with the challenge of representing and serving diverse interests. By modelling the virtue of inclusiveness and integration to synthesize relevant expertise across a complex policy space, intermediaries can create a sense of identification with democratic policymaker audiences, who need to embrace the same virtue.

Transparency

AMR, like any complex policy issue, involves navigating many conflicting interests, motivations, and values. Intermediary authors address this situational challenge in their reports by enacting the virtue of transparency. Here, transparency is defined expansively in multiple senses of the word, encompassing that intermediaries strive to be personally transparent (open-minded, honest) and to write in a transparent way (easy to understand, accessible), with a transparent process (open to public scrutiny) and an emphasis on dialogue and deliberation as means to enact transparency.

Across all the cases, transparency as a virtue emerges in interviews, report texts, and reception evidence. Performing an extended invention process, as discussed above, is one way for intermediaries to demonstrate transparency. Reflecting on the IACG process, secretariat

[224] Dahl, *On Democracy*.

director Haileyesus Getahun emphasized that the IACG aimed to produce its report in a "very transparent and participatory manner."[225] These efforts to be transparent were noted by those engaged. For example, the Antibiotic Resistance Coalition noted how, "in the last year of the IACG's operations, the efforts to ensure openness to its proceedings, where possible; public consultation on its draft and final recommendations; and the public posting of commissioned reports, discussion papers and external inputs into its deliberative process were all key steps in ensuring transparency."[226] For the IACG, publicly posting and inviting engagement throughout their report-writing helped make the process feel more transparent.

Embracing transparency as a virtue can also give intermediaries confidence in their position as interactional experts. For example, O'Neill report team director Hala Audi, described the team's philosophy on transparency as a strategy, "We had a way of working that was very, very open. I said to my team, we share everything. It's completely open book because the more we get challenged and comments and pushback before we publish, the higher the quality will be, but also the more people will feel they were in the tent."[227] Being transparent helps increase a sense of quality and buy-in, something especially important for intermediaries as interactional experts without domain-specific knowledge.

The intermediary author teams also consistently emphasized transparency — in the sense of being clear and understandable for audiences — as an important virtue to enact in their work. For example, Rajeshwari Sinha at CSE underscored, "in any communication with policymakers, we must be simple and clear, understandable and free of technical jargon."[228] IACG secretariat

[225] *Antimicrobial Resistance*, 2019, 31:55.
[226] The Antibiotic Resistance Coalition has 20+ member organizations as signatories on this document, representing a range of non-profit and advocacy groups from around the world. Antibiotic Resistance Coalition, "Comments for the Tripartite Secretariat's Public Discussion on Establishing a One Health Global Leaders Group."
[227] Hala Audi, interview with the author, Oct. 17, 2023.
[228] Rajeshwari Sinha, interview with the author, Sept. 21, 2023.

team member and writer Ian Grubb stressed, "you've got to keep to accessible" for the diverse audiences of policy reports, by producing texts that are "short, clear, and concise."[229] O'Neill report team member Anthony O'Donnell reflected, "it all ultimately comes down to really clear, simple communication."[230] Reception interview and evidence suggest audience appreciation of intermediary's efforts to enact transparency, in this the sense of accessibility and clarity. For example, UK Member of Parliament Kevin Hollinrake explained of the O'Neill report, "Jim is a smart guy, but he made it very simple and accessible. So the headline figure… 10 million people dying by 2050 — it made it easier for parliamentarians to speak to it. And then he had these 10 rules, he just made it all very accessible."[231] Making the information feel understandable to readers enables is a key way for intermediaries to embody the virtue of transparency.

Transparency as virtue for intermediaries connects with *eunoia*, by showing an intermediary's goodwill and openness towards its readers and that the authors are honest with nothing to conceal. Transparency also offers an interesting point of contrast distinguishing intermediaries as interactional experts rather than contributory experts. Contributory experts (e.g., scientists) often argue for epistemic authority based on access to rare and privileged knowledge beyond the grasp of non-experts.[232] Alternative or non-traditional experts can also claim contributory status based on their privileged access to rare knowledge, such as their embodied and lived experiences.[233] The result is that most contributory experts can teach what they know, but are reluctant or unable to teach their "way of knowing."[234] Since intermediaries acquire their interactional expertise through linguistic socialization, embracing transparency as a

[229] Ian Grubb, interview with the author, Sept. 27, 2023.
[230] Anthony McDonnell, interview with the author, Sept. 26, 2023.
[231] Kevin Hollinrake, interview with the author, Jan. 29, 2024.
[232] Walsh, *Scientists as Prophets*; Hartelius, *The Rhetoric of Expertise*.
[233] Hartelius, *The Rhetoric of Expertise*; Archer, "Understanding the Rhetorical Dynamics of Expertise Amid a Manufactured Controversy."
[234] Hartelius, *The Rhetoric of Expertise*, 165.

virtue helps them bolster trust and credibility with readers, by showing what they learned and how they learned it as clearly and openly as possible.

Independence

A third way intermediaries can address the situational challenges of complex policy issues is by enacting the virtue of independence. As a virtue, independence entails the ability to think and act autonomously, maintain impartiality, and resist external influence or control.

In these case studies, intermediaries' unique positionality between communities enabled them to emphasize their independence in various ways for rhetorical benefit. For example, the O'Neill report text is described as an effort that is "supported by the Wellcome Trust and UK Government, but operates and speaks with full independence from both."[235] When asked about IACG recommendations, secretariat lead Haileyesus Getahun emphasized, "The independence of the group in its own right means it can give whatever recommendation it wants."[236] CSE describes itself as a public-interest research organization that strives "to get funded so that there are no ties attached; we stay credible and independent."[237] Director General Sunita Narain emphasized funding independence as critical to her *ethos* as an intermediary: "To maintain my credibility, it's important that we are not funded by anyone with conflicting interests, and to make it very clear to people. They may not like what I say, they may not agree…But I need them to know we come to this conversation from a public interest point of view, and that we do not have any funding from anyone which would dictate our positions."[238] In each case, the intermediaries' independence is important to their *ethos*.

[235] O'Neill, "Tackling Drug-Resistant Infections Globally: Final Report and Recommendations," 84.
[236] Anderson, "Broad Inter-Agency Group Embarks Upon Recommendations For Global Antimicrobial Resistance Policy."
[237] "About CSE."
[238] Sunita Narain, interview with the author, Nov. 8, 2023.

Enacting independence helps intermediaries navigate conflicting opinions in complex policy spaces, ultimately enhancing the credibility of their reports. For example, IACG's secretariat director Haile Getahun explained an important aspect of his team's work was serving as independent brokers between expert interests consulted: "When there are these different interest groups or different interests are conflicted, the secretariat has to stand for evidence and has to stand for science and then showcase that consensus middle ground can be found. If you do not have an astute, independent-minded secretariat, then it's a challenge because the conflicted interests can drive things in their own way and there will be no middle ground."[239] In the IACG's case, the independence of the secretariat proved important in negotiating conflicting interests between various group members and stakeholder comments.

Jim O'Neill has used his position as an independent, non-expert outsider as a boon to his credibility and intermediary ethos. For example, O'Neill emphasized how maintaining independence felt critical to the success of his approach, especially at the outset of the review: "I didn't want to be colored by what [scientific experts] had said before, because it seemed pretty obvious to me that whatever they'd said before hadn't had a positive policy response.... I didn't want to limit us to views of people that only hang around the AMR space and just sort of talk to each other in echo chambers."[240] O'Neill said that UK Prime Minister David Cameron "wanted a chair from outside the scientific community to help translate the problem to a broader audience and accelerate action," and noted, "Inside the health and science world a lot of people do know about the size and scale of the [AMR] problem, but they are unable or incapable of translating it into a non-nerdy scientific issue."[241] When asked by a radio interviewer, "How on earth do *you*, a

[239] Haileyesus Getahun, interview with the author, Sept. 11, 2023.
[240] Jim O'Neill, interview with the author, Sept. 6, 2023.
[241] Solon, "Meet the Economist Taking on Drug-Resistant Superbugs."

non-specialist, find yourself in the midst of this field?" O'Neill replied, "So I guess they deliberately thought of having somebody like me that *doesn't* know anything about the remarkable technical knowledge."[242] When asked, "How much thought had you given to AMR before being commissioned by the UK government to lead the review?" O'Neill replied, "That's easy: none. I'm one of the billions of people who didn't know what it was. I couldn't even pronounce antimicrobial resistance for a number of weeks."[243] Repeatedly, O'Neill argued that his independent, intermediary position enabled him to *better* translate insiders' insights into action. From an insider perspective, pharmaceutical industry leader and scientist John Rex suggested the O'Neill team's independence helped them better convey AMR issues to broader audiences. Rex explained, "If I've learned one thing along the way, it's that the techy, geeky nerds can identify the problem, but it's really important that we find translators to clarify, because otherwise — when we go off into our techy, geeky mode — we confuse things and everybody else's eyes glaze over."[244] For Rex, the O'Neill team's independent, outsider perspective is important to capture the attention of audiences outside narrow technical communities.

We can elucidate the value of independence as a virtue for intermediaries by using key *ethos* concepts. Independence ties into *phronēsis* by showing that the intermediaries are well-positioned to make wise judgments, unencumbered by vested interests. Considering *eunoia* in terms of the goodwill an audience feels towards a writer, independence can increase goodwill by emphasizing that the intermediaries are writing these reports for the greater good, not for personal gain. It also establishes goodwill with an audience of people who are not technical

[242] "When the Drugs Don't Work," May 3, 2015.
[243] Mullard, "An Audience with Jim O'Neill."
[244] John Rex, interview with the author, Feb. 6, 2024.

experts by increasing transparency. As Rex noted above, policy audience members' eyes can glaze over when they encounter highly technical jargon. It shows goodwill for the audience when material is adapted for their understanding and interest. Long-standing discourse on evidence-based policymaking further accounts for why this virtue of independence is important to intermediaries' particular *ethos* as interactional experts. In his influential book *The Honest Broker,* Roger Pielke Jr. argues that scientists should strive to operate as honest brokers who expand and clarify a range of policy options for decision-makers (rather than stealth issue advocates who limit options to push a particular agenda).[245] This perspective is widespread in science communication advice, mostly aimed at scientists who aim to influence policy.[246] Yet, this is a delicate rhetorical balance, as scientists striving to serve as honest brokers risk being accused of either harboring hidden self-interest, or of providing useless advice.[247] It is beyond the scope of this chapter to debate whether the honest broker ideal is possible or even desirable. Nevertheless, the honest broker concept is undeniably appealing to many at the interfaces of science and policy. For intermediaries, enacting and emphasizing independence as a virtue is a promising rhetorical resource to strengthen *ethos* appeals.

Implications of an Ethos of Interactional Expertise

For those studying intermediaries, this chapter argues for the value of rhetorical concepts to better understand ways intermediaries can communicate persuasively with policy audiences. Leveraging long-standing and multi-dimensional ideas from rhetoric — such as rhetorical *ethos* — adds important explanatory power to empirical studies of intermediaries' communicative

[245] Pielke, *The Honest Broker*.
[246] e.g., Blastland et al., "Five Rules for Evidence Communication"; Priest, Goodwin, and Dahlstrom, *Ethics and Practice in Science Communication*.
[247] Bandola-Gill, "The Legitimacy of Experts in Policy"; Walsh, "Before Climategate."

efforts. In addition to describing things the intermediaries are doing, ideas such as *ethos* can account for why those things seem to be more or less successful with attention to particular contexts. This can help us theorize across case studies, and can inform intermediaries' processes and communication choices in other, similar situations.

For those studying experts and expertise, this chapter contributes to debates about the nature of interactional expertise. It supports those who argue interactional experts are not counterfeits merely trying to mimic or "pass" as real, contributory experts. Instead, the cases show ways intermediaries make credible contributions to AMR policy discourse — by displaying their learning process, engaging a wide range of stakeholders, and embracing inclusivity, transparency, and independence.

These cases, however, suggest complex interactions between the three virtues of inclusivity, transparency, and independence that warrant more investigation in future research. It seems that the three virtues can both harmonize and conflict with one another. For example, the virtue of independence may complement and reinforce the virtue of transparency, because intermediaries can emphasize how their independence enables them to convey AMR knowledge more clearly (i.e., more transparently) than contributory experts. Yet, the virtue of independence could be seen as opposing inclusivity — such as O'Neill's decision to eschew a scientific advisory group at the start of his review and exclude those perspectives initially. It also appears possible to prioritize different values at different times. Importantly, O'Neill and his team did not ignore expert scientific advisors throughout their review; the team initially sought to cultivate independent thinking, but then also included a wide range of scientific and other experts' perspectives. It appears that successful intermediaries must manage this tension and enact all three virtues: emphasizing their independence while also demonstrating open-mindedness by

including and engaging with a wide range of perspectives through a transparent process. The case studies suggest intermediaries can and do navigate this tension rhetorically.

For practical purposes, this chapter outlines key considerations and promising strategies for individuals, teams or organizations who find themselves in an intermediary role. Facing the critical question of credibility — why should your intended audience listen to you? — is a first step. *Ethos* and its components of *aretē*, *phronēsis*, and *eunoia* offer time-tested heuristics for intermediaries to think through their options and make decisions about how to communicate. Additionally, the idea of intermediaries as "interactional experts" can inform the selection of strategies that best cultivate and convey an *ethos* of interactional expertise in a given context. This chapter outlines two such strategies: performing an extended invention process that features stakeholder engagement, and enacting signature virtues that address recurring issues in intermediary situations.

Chapter 4. Arguing for Attention: Rhetorical Moves for Agenda Setting

Introduction

Why do some complex, techno-scientific issues gain policymakers' attention, while others do not? What can any one person or group do to affect change in policy issue prioritization? Questions of agenda setting have animated decades of research in public policy studies, and inspired numerous theories, models, and frameworks that seek to account for various dynamics of attention within policy processes.[248]

Researchers in this area, however, have critiqued current scholarship for catering too narrowly to niche academic audiences. Theories are used to characterize policy processes, but rarely to generate practical guidance.[249] Existing policy process literature tends to offer vague and hard-to-enact advice. For example, a review by policy scholars Kathryn Oliver and Paul Cairney surveyed suggestions for scientists seeking to influence policymaking, including via agenda setting. They note that advice has been consistent over the last 80-plus years, but it is often bland and generically common-sense.[250] One theme, for instance, was advice to communicate well — to have clear, simple messages that avoid jargon but still convey complexity; use storytelling that deploys emotional appeals or humour; and develop a deep understanding of target audiences, among many other things. While existing literature highlights constraints and opportunities to influence policy, actioning the resulting tips can be tricky

[248] In this chapter, the term agenda generally refers to a contextual list of actionable government priorities, as discussed in Zahariadis, *Handbook of Public Policy Agenda Setting*. Policy process research can be defined as the study of the patterns of interactions surrounding public policy over time, often focusing on the nature of political systems, policy subsystems within larger political systems, and authoritative decision-making venues, following Weible and Sabatier, *Theories of the Policy Process*.
[249] Cairney and Weible, "The New Policy Sciences"; Weible and Cairney, *Practical Lessons from Policy Theories*.
[250] Oliver and Cairney, "The Dos and Don'ts of Influencing Policy"; Cairney and Oliver, "How Should Academics Engage in Policymaking to Achieve Impact?"

because, as Oliver and Cairney summarize: "deciding how to seem omnipotent yet credible; humble but authoritative; straightforward yet not over-simplifying—all while still appearing authentic—is probably beyond the scope of most of our acting abilities."[251] Specific theories of public policy processes, such as John Kingdon's Multiple Streams Framework,[252] have similarly been critiqued for lacking actionable advice to those seeking to influence policy agenda setting.[253] Multiple Streams literature repeatedly asserts that "being persuasive" is a vital trait of those who successfully influence policy agendas, that "making arguments" is an essential skill, and that "rhetorical persuasion" is a key strategy — but offers little guidance on how practitioners might act upon those observations.[254]

In this chapter, I argue that insights from rhetorical studies and public policy process studies can be productively combined to identify and explain persuasive strategies in written reports that seek to influence policy agendas. As evidence for this claim, I demonstrate that using specific rhetorical vocabulary alongside concepts from Multiple Streams illuminates three promising strategies across the case studies: arguing urgency then possibility, appealing to momentum, and repeating numbered lists. Given that each report was relatively successful in its aims of AMR agenda setting, we can learn from analyzing the rhetorical dynamics within and across these cases. In what follows, I briefly introduce Multiple Streams and rhetorical theory separately, focusing on how each relates to agenda setting and practical advice. Then, I show how an analysis of the three case studies reveals common strategies that can be better understood

[251] Oliver and Cairney, "The Dos and Don'ts of Influencing Policy," 7.
[252] Kingdon, *Agendas, Alternatives, and Public Policies, Update Edition, with an Epilogue on Health Care*.
[253] Zohlnhöfer and Rüb, *Decision Making under Ambiguity and Time Constraints: Assessing the Multiple-Streams Framework*; Cairney, "Three Habits of Successful Policy Entrepreneurs."
[254] Sometimes called Multiple Streams Framework, Approach or Analysis (and MSF or MSA) or the Multiple Streams model, in this chapter I will refer to the body of work stemming from John Kingdon's 1984 *Agendas, Alternatives, and Public Policies* as Multiple Streams for simplicity. Mintrom, "So You Want to Be a Policy Entrepreneur?"; Aviram, Cohen, and Beeri, "Wind(Ow) of Change"; Brouwer and Biermann, "Towards Adaptive Management"; Brouwer and Huitema, "Policy Entrepreneurs and Strategies for Change"; Cohen, "Policy Entrepreneurs and Agenda Setting."

in light of combined insights from rhetorical theory and Multiple Streams. Last, I discuss the implications of these strategies.

Multiple Streams

Multiple Streams is one of the most successful and popular theories within public policy process studies, with hundreds of empirical studies demonstrating its versatility and theoretical richness.[255] Introduced by John Kingdon in 1984, Multiple Streams aims to explain how issues rise and fall on the governmental agenda.[256] Kingdon developed the framework from a massive qualitative study of agenda setting in two US federal policy areas (health and transportation). Drawing on 247 interviews with policy-makers and influencers and a series of 23 case studies, Kingdon identified elements and dynamics that seemed universal to situations of policy change.

The resulting framework proposes several key assumptions about how agenda setting happens. Multiple Streams presumes competition: in a world of almost infinite problems, individual decision-makers have finite time and capacity. So, real-world policymakers operate with "bounded rationality," making choices before they have considered all possibilities or logically clarified their preferences.[257] The framework also assumes that problem definition is fundamentally ambiguous — people define the same situations in very different ways. Participation in a given policy process is fluid, with individual actors and organizations constantly joining and leaving the situation over time. Drawing on these assumptions, Multiple Streams presents a picture of policymaking that is inherently non-linear. Kingdon built on Cohen, March, and Olsen's "garbage can" model of organizational choice, which describes the

[255] DeLeo, Zohlnhöfer, and Zahariadis, *Multiple Streams and Policy Ambiguity*; Rawat and Morris, "Kingdon's 'Streams' Model at Thirty"; Cairney and Jones, "Kingdon's Multiple Streams Approach"; Hoefer, "The Multiple Streams Framework."
[256] Kingdon, *Agendas, Alternatives, and Public Policies*.
[257] Simon, *Models of Bounded Rationality, Volume 3*.

chaotic reality of organizational decision-making as an "organized anarchy."[258] Applying those ideas to governmental agenda setting, Multiple Streams presumes policymaking does not happen in discrete, sequential stages.

These assumptions underlie the main components of Multiple Streams and how they interact. Kingdon describes the policy process as encompassing three distinct, parallel streams of activity: the *problem*, *policy*, and *politics* streams. The problem stream contains the issues vying for policymaker attention. The policy stream holds various ideas and potential solutions. The political stream denotes the political factors influencing issue attention, like political mood and elections. For any major policy change to take place, these independent streams must come together when a *policy window* opens, presenting an often-fleeting opportunity to merge or *couple* the streams. This momentary coupling of streams is when an issue becomes a recognised problem on the government agenda. During a window, attention lurches to a policy issue in the problem stream. Simultaneously, a solution is ready in the policy stream, and, in the politics stream, policymakers have the motivation and opportunity to turn it into policy. Coupling is facilitated by *policy entrepreneurs*, the individuals or groups who invest considerable time, energy, and resources in pursuit of agenda change.

Research on policy entrepreneurs has emerged as a thriving sub-area within policy process literature. Empirical studies of policy entrepreneurs have generated lists of strategies and characteristics observed in successful examples (or absent in failures). For example, good policy entrepreneurs are tenacious, ambitious, and sociable, among many other traits. Across diverse studies, successful policy entrepreneurs are consistently characterized as persuasive. They are skilled in making arguments effectively and must be "adept at tactical argumentation, making

[258] Cohen, March, and Olsen, "A Garbage Can Model of Organizational Choice."

persuasive arguments at every turn."[259] To further their goals, policy entrepreneurs employ strategies such as rhetorical argumentation, information dissemination, and the use of symbols to try to couple streams during a policy window.[260]

Multiple Streams has enjoyed lasting popularity, with over 30,000 citations of Kingdon's book and hundreds of scholarly articles applying and refining the framework.[261] It also has a lower "barrier to entry" than other policy theories, thanks to its flexible concepts and metaphors, which make its lessons relatively accessible and applicable to practitioners, students, and interdisciplinary researchers outside of policy studies.[262] However, Multiple Streams literature has been critiqued for lacking a coherent research agenda, thereby failing to produce new knowledge systematically or to meaningfully describe accumulated wisdom in actionable ways.[263] For this chapter, Multiple Streams' focus on agenda setting, lasting impact, and large empirical literature make it an ideal public policy process theory to combine with insights from rhetorical theory to develop more practice-oriented advice.

Rhetoric and Rhetorical Theory

Rhetoric can be understood in two main ways, as both the "academic field that analyzes suasion as well as the suasion itself that is being studied."[264] Since classical Greece, scholars of rhetoric (known as rhetoricians) have systematically studied and refined ideas about persuasion, including what works in different contexts, and how rhetorical skill can be learned and taught.

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[259] Mintrom, "So You Want to Be a Policy Entrepreneur?," 313.
[260] Aviram, Cohen, and Beeri, "Wind(Ow) of Change"; Brouwer and Biermann, "Towards Adaptive Management"; Brouwer and Huitema, "Policy Entrepreneurs and Strategies for Change."
[261] Greer, "John W. Kingdon, Agendas, Alternatives, and Public Policies."
[262] Kingdon's original Multiple Streams model and subsequent literature makes use of many metaphors, including the streams (which inspire water-based metaphors of surfing or riding waves, or mythological Poseidon controlling tides), various windows, entrepreneurship, and an evolutionary "primeval soup" of ideas in the policy stream. Cairney and Jones, "Kingdon's Multiple Streams Approach," 38.
[263] Zohlnhöfer and Rüb, *Decision Making under Ambiguity and Time Constraints: Assessing the Multiple-Streams Framework*; Cairney, "Three Habits of Successful Policy Entrepreneurs."
[264] Ceccarelli, "Language and Science from a Rhetorical Perspective," 9.

With rhetoric's roots in ancient democracy and law courts, rhetorical scholarship has many intersections and overlaps with policy-process questions of agenda setting. For example, rhetoricians have long studied presidential rhetoric and the rhetoric of public policy, including studies of the dynamics of political discourse when scientific-technical and public spheres interact.[265]

Unlike public policy process theories (which mostly aim to explain and predict policy change), rhetorical "theory" is primarily pedagogical, in that it aims "to teach people how to experience their rhetorical environments more richly."[266] As such, rhetorical theories should be viewed as heuristic devices to learn about and guide symbolic action. The more rhetorical theories in someone's repertoire — and the better they become at recognizing the appropriate use of said theories against a backdrop of possibilities — the more choices they have to interpret and shape rhetoric. Rhetorical scholar Jeanne Fahnestock argues that rhetorical possibilities are often invisible to non-rhetoricians, who "lack rhetorical theory's analytical vocabulary for defining the possibilities at interconnected levels, including lines of argument, arrangement tactics, methods for characterizing the rhetorical situation and its players, and the deeper epistemically-orienting choices that come from larger patterns of selection and omission."[267] The rhetorical tradition offers a rich analytical vocabulary to make visible the possibilities and choices inherent in any persuasive situation.

I am far from the first to advocate connections between policy studies and rhetorical studies. For example, policy researchers have suggested that incorporating "ideas drawn from Aristotelian rhetoric in policy studies appears promising" and the link between the two areas is

[265] Scott, "The Public Policy Debate over Newborn HIV Testing"; Bennett, *Managing Diabetes*; Asen, "Reflections on the Role of Rhetoric in Public Policy"; Asen et al., "The Research Says"; Campbell and Jamieson, *Deeds Done in Words*; Heidt and Stuckey, *Reading the Presidency*.
[266] Brummett, "Rhetorical Theory as Heuristic and Moral," 103.
[267] Fahnestock, "Promoting the Discipline," 4.

"intriguing and warrants further development."[268] Yet, current engagement between the two academic areas remains limited, presenting an opportunity for mutual development. Rhetoric's analytical vocabulary offers a valuable but overlooked complement to public policy process theories in general, and Multiple Streams specifically, because it can elaborate on advice to be persuasive by offering examples of *how* that advice can be enacted, couched within a rich system of multi-level, interconnected terminology. Reciprocally, rhetorical studies could benefit from the moorings of a well-established body of empirical and theoretical work, such as Multiple Streams, to help build and refine rhetorical learnings beyond single case studies, while retaining attention to context. In what follows, I demonstrate the benefits of combining insights from Multiple Streams and rhetorical theory to identify and explain three promising strategies for agenda setting that emerge across the case studies. For each, I first describe the observed strategy, then analyze it using concepts from rhetorical theory and Multiple Streams to highlight how the two academic areas can help theorize the dynamics at play.

Arguing Urgency Then Possibility

Reading across the reports with sensitivity to the rhetorical dynamics of agenda setting reveals a pattern**.** Each report argues for policymaker attention based on the urgency of the issue and then appeals to the possibility of solutions for AMR as a policy problem.

The O'Neill report argues for various facets of AMR urgency throughout its pages — noting urgent problems, urgent priorities, urgent needs, urgent questions, and actions to be taken urgently.[269] The O'Neill report also argues explicitly for the possibility of "solving" AMR, with comments such as: "Given the size and complexity of this threat it would be easy to think that

[268] Knaggård, Dolan, and Blum, "Knowledge and Non-Knowledge in Theories of the Policy Process," 9.
[269] O'Neill, "Tackling Drug-Resistant Infections Globally: Final Report and Recommendations," e.g., 1, 5, 8, 19, 29, 38, 57.

solving it would be nigh on impossible. We strongly believe that this is not the case, and are confident that huge strides can be made this year, and beyond."[270] This quote also shows how possibility can entail both good and bad outcomes: optimistic themes of the possibilities to act on AMR can be linked to negative themes of threat (i.e. the possibilities of future danger or damages) if no action is taken.

The CSE report also argues that there is an urgent need for AMR policy attention in low- and middle-income countries (LMIC), prioritizing activities that should be taken in both "the near and distant future."[271] Although the CSE report uses the word "urgency" just once,[272] urgency emerges as a theme in its arguments that AMR is a threat that "needs to be addressed" in LMIC policy,[273] and that all stakeholders need to "adequately recognize the problem and aggressively work towards the solution."[274] An impending deadline further heightens urgency — the CSE report notes that countries are required to submit their inaugural National Action Plans (NAPs) on AMR to the World Health Organization (WHO) by mid-2017, highlighting an urgent timeframe within which readers need to act. In subsequent CSE commentary on AMR drawing on its report, a headline emphasizes that AMR as an issue that "calls for urgent action" from policymakers.[275] Throughout, the CSE report appeals to the negative possibilities of AMR as an issue, defining AMR as a "public-health threat" to humans, which also "poses risks to the ability to treat animal disease."[276] But the report also provides numerous examples of positive best-

[270] O'Neill, 70.
[271] "CSE Report," 13.
[272] Urgency is mentioned explicitly in the front matter of the report, when introducing the organization: "CSE is a public-interest research and advocacy organization based in New Delhi. It researches into, lobbies for and communicates the urgency of development that is both sustainable and equitable. CSE has been working to highlight and address the animal and environmental aspects of antimicrobial resistance in India and at the international level through necessary change in policy, practice and systems," 2.
[273] "CSE Report," 5.
[274] "CSE Report," 8.
[275] Sinha, "Antimicrobial Resistance Calls for Urgent Action."
[276] "CSE Report," 6.

practice AMR policy possibilities for LMIC to adopt, and closes by listing dozens of possible policy actions, prioritized by how quickly recommended activities should be completed (within one year, one to three years, three to five years, and ongoing).[277]

The IACG report exhibits a similar urgency-possibility pattern, arguing for urgent action and then expounding possibilities for policy solutions. The report starts by emphasizing urgency on its cover, with the title "No time to wait" title beside an hourglass that has almost run out, filled with antibiotic pills instead of sand (see Figure 2). Then, the first page of key points concludes with the message that "the challenges of AMR are complex and multifaceted, but they are not insurmountable" — reinforcing that AMR-related problems are possible to solve. The report's introduction section reiterates urgency, arguing "unless the world acts urgently, [AMR] will have a disastrous impact within a generation." Then, it closes by repeating that, while the challenges of AMR are not insurmountable, "there is no time to wait."[278] In its recommendation sections, the IACG report suggests many possible actions, while repeatedly emphasizing their urgency – for example that recommendations should be "implemented as a matter of urgency," and that action is needed to address the "urgency and threat posed by antimicrobial resistance."[279]

Figure 2. IACG Report Cover

[277] "CSE Report," 13.
[278] "IACG Report," 10.
[279] "IACG Report," 13, 20.

At first glance, this observed pattern of pairing urgency and possibility may seem unremarkable, as it appears common sense that a policy entrepreneur would argue their issue is both urgent and solvable. However, the pattern is notable as a strategy for at least three reasons. First, all reports have limited space to argue but nearly infinite argumentative possibilities. In these cases, the reports could have focused more on one argument over the other (i.e., urgency or possibility, but not both), or reversed the order (i.e., possibility then urgency). Or, they could have argued for AMR's place on policy agendas through other reasonable pairings, such as economic and moral harms, prevention and innovation, or causality and responsibility, among many other possible two-part appeals. Second, my observation is not that urgency and possibility are the *only* arguments made in these reports — the reports do indeed make a variety of other appeals. Instead, this particular pairing is notable because it emerges as salient in all three report texts, and in evidence of the reports' production and reception (as will be analyzed below). The alignment between argument patterns in the texts and reflection of the same patterns in reception makes this strategy noteworthy for further examination. Third, any choice of argument can present downsides, depending on the context and how the appeal is deployed. The specific, *sequenced* pairing of urgency then possibility might be working in these cases to overcome argumentative hazards that arise from a focus on urgency alone. Studies of environmental rhetoric, for example, have investigated significant potential drawbacks of urgency arguments, which can lead audiences either to apocalyptic fatalism or to quick-fix, problematic solutions.[280] While these three reports were largely successful in their awareness-raising, agenda-setting goals, other research shows us that success when appealing to urgency is not guaranteed.

[280] Senda-Cook et al., "Engaging Complex Temporalities in Environmental Rhetoric"; Peterson, "The Rhetorics of Crisis and Apocalypse in the Intermountain West."

Rhetorical attention to argumentation combined with insights from Multiple Streams can help explain how this high-level, sequential argumentation strategy worked effectively in these cases.

Lines of Argument and Coupling Streams

A vast body of rhetorical scholarship — spanning classical heuristics to contemporary theories — focuses on finding and making arguments. For the purposes of this chapter, I use the term "lines of argument," defined as the pathways of reasoning and evidence used to build a persuasive case that appeals to an audience.[281] A line of argument suggests that beginning with one theme or premise can set a trajectory for subsequent arguments.[282] In this light, rhetoric helps us understand the observed themes of urgency and possibility to be a strategic line of argument for AMR's position on policy agendas. Insofar as the strategy is a line of argument, the ordering of these themes in the report texts becomes important. Urgency must be established first, followed by the possibility of an effective response.

Looking across reception of this strategy in the cases, the paired urgency-possibility argument is echoed in audiences' reactions to the reports. In a 2019 UK House of Lords debate on drug-resistant infections, the IACG report argument pairing was highlighted directly. Lord Lansley first introduced the report by noting its arguments of AMR urgency: "The timeliness of this debate was further illustrated by the fact that on Monday the [UN IACG on AMR] reported to the Secretary-General with a document that said: 'Unless the world acts urgently, antimicrobial resistance will have disastrous impact within a generation.'" Lansley then closed

[281] More specific rhetorical terms and theories regarding lines of argument include *topoi* from classical rhetoric (e.g. see Leff, "Up from Theory" and Walsh, "The Common Topoi of STEM Discourse") and *loci* as used in Chaim Perelman and Lucie Olbrechts-Tyteca's landmark book, *The New Rhetoric*.

[282] For example, imagine making a case for being vegan. If you choose to appeal to moral imperatives of animal welfare, that suggests a different trajectory for subsequent points than if you choose to appeal to an audience based on the health benefits of veganism as a diet choice, or arguing its links to climate change. The "place" from which an argument starts has implications for where it can go.

his remarks quoting the report's arguments of possibility: "The UN document, published on Monday, also said: 'The challenges of antimicrobial resistance are complex and multifaceted, but they are not insurmountable.' That goes to the heart of this debate."[283] While some reception evidence shows audiences emulating the reports' urgency-possibility sequence, many mirror the pattern by first referencing possibility, then urgency. For example, later in the same House of Lords debate, Department of Health and Social Care Parliamentary Under-Secretary of State Baroness Blackwood reiterated:

> In closing, I do not think that I can do better than to follow my noble friend [Lord Lansley] in quoting from the IACG report to the Secretary-General: "The challenges of AMR are complex … but they are not insurmountable." We should take courage from this, but should remember that our success will depend on the urgency with which we drive forward this response and the continued success in securing international collaboration. I believe that together we can achieve that."[284]

Blackwood uses the quote and pairing in her own appeals to fellow policymakers to prioritize an AMR policy response. Also flipping the themes, the UN Secretary General issued a written response to the IACG report which first states that AMR challenges at the national, regional and global levels can be addressed (i.e., that they are possible to address),[285] and then emphasizes that "urgency" is one of the "critical shifts that emerged from the recommendations of the coordination group," elaborating that "while progress has been made, urgent action is needed" to address AMR. For these policymakers, the IACG report's argument that AMR is an urgent, solvable problem appears to be a resonant message to repeat in public discourse. However, the fact that audiences can flip the appeals suggests there is no logical need to order urgency first; instead, I posit that arguing urgency-then-possibility is an effective psychological and emotional sequence for the report authors to capture audience interest.

[283] "Antimicrobial Resistance," May 2, 2019, Column 1113.
[284] "Antimicrobial Resistance," Column 1136.
[285] "Follow-up to the Political Declaration of the High-Level Meeting of the General Assembly on Antimicrobial Resistance Report of the Secretary-General," 23.

For CSE, less published reception evidence and commentary are available — partly due to my limitation of including only English-language texts, but also because of differences in India's national government transcripts and CSE's relatively smaller reach compared to the other two higher-profile reports. However, interviews suggest arguments pairing urgency and possibility as a strategy seems to have resonated with policy audience members. Akshay Dhariwal was the director of India's National Center for Disease Control, responsible for coordinating between multiple government ministries to craft their first National Action Plan on AMR in 2017. He recalled inviting CSE to consult on the national plan's development, inspired in part by the report: "because of their interest and their publication going across the country to the policy level, they became part of consultation." Dhariwal felt that urgency is the most important message for a policy issue like AMR to capture his attention, and to drive action with his ministerial colleagues: "Number one, understanding that this is a public health emergency. That AMR is not a routine problem. It's an emerging and need-to-be attended to urgent priority." Then, reflecting on CSE's contributions, Dhariwal noted the report's arguments for possibility as helpful: "We were lucky to have them and to take into account their perspective, their reporting of evidence and what is possible for action, from which was made part of the National Action Plan."[286] Both arguments seemed resonant — for Dhariwal, the urgency caught his attention, but the possibilities helped keep him engaged with AMR as an issue. While appreciating that CSE highlighted possibilities for action on the animal and environmental aspects of AMR, Dhariwal emphasized that an introductory appeal to the urgency of AMR as an issue was key to policymaker attention, and ultimately policy action.

[286] Akshay Dhariwal, interview with the author, Jan. 25, 2024.

The CSE report also aimed to raise AMR awareness in developing countries. Tapiwanashe Kujinga is a lawyer and health advocate, who was the head of Zimbabwe's AMR program secretariat and a member of the core group responsible for developing Zimbabwe's National Action Plan. He likewise noted the urgency of AMR is what initially drew his attention to the issue — and how it felt eerily similar to the early days of HIV/AIDS — "When the statistics were laid out to me, I then realized that [AMR] was another huge pandemic, which was upon us, and something had to be done immediately, urgently." However, Kujinga noted the initial lack of policy examples — a dearth of precedents or possibilities — had been a challenge in developing their national action plan: "In 2015, 2016, 2017, there was not an awful lot of literature like you've got now. We were guided by a number of documents, including the Global Action Plan for AMR, the [World Health Assembly] Resolution of 2015. And of course, there were quite a number of other scientific publications and articles…but in terms of *policy* formulation, with good examples and options for Zimbabwe, there was very, very little." Kujinga said that CSE's guidance helped with seeing what was possible: "Some of the issues that we needed help with — issues on the environment and animal health — I see them in [the report] and see the ideas and examples, which we used for our national action plan development and review."[287] Arguing for AMR's urgency can help draw attention to the issue, and pairing appeals to urgency with possibility — as done in the CSE report — proved helpful to sustain AMR's place on Zimbabwe's policy agenda and support action. Lastly, CSE has continued to use the urgency-possibility line of argument in their work, suggesting it still feels productive for their agenda-setting goals. In a 2024 presentation to policymakers on combatting AMR, CSE Director General Sunita Narain closed her presentation by emphasizing that addressing AMR is "Critical

[287] Tapiwanashe Kujinga, interview with the author, Jan. 17, 2024.

and urgent. And possible," as the final bullet point of the slides, emphasized in red text.[288] Narain's closing words illustrate how CSE continues to make appeals to urgency then possibility for AMR agenda-setting.

Reception evidence of the O'Neill report also suggests policymakers appreciated the line of urgency-possibility argument. For instance, discussing the O'Neill report in House of Lords debate, Lord Prior of Brampton — then Department of Health Parliamentary Under-Secretary of State — closed his remarks about the need to act on AMR quickly by summarizing the urgent consequences of AMR, then directly quoting one of the report's appeals to possibility:

> In conclusion, this is a hugely serious issue. AMR kills many people at the moment and could kill many millions more in the future. It also has huge economic consequences for the world. I will end by giving the last word to my noble friend Lord O'Neill, who has done so much to raise awareness of this great issue. I quote the last paragraph of his foreword to the latest report: "Although AMR is a massive challenge, it is one that I believe is well within our ability to tackle effectively. The human and economic costs compel us to act: if we fail to do so, the brunt of these will be borne by our children and grandchildren, and felt most keenly in the poorest parts of the world."[289]

The O'Neill report's mix of appeals to the feasibility of solutions and urgent appeals to action offered policymakers a quotable line to amplify. These observations align with policymaker interview comments. For example, considering what is most important to catch his attention and that of fellow parliamentarians, elected UK Member of Parliament Kevin Hollinrake said:

> You've got to set the burning platform: you've got to articulate that the platform is burning and why it's burning. That's the first starting point. But then you need to set out some clear asks. And so often you have people speaking to things who're just not clear about what they need. Politicians, they haven't time to try and distill it. We need to know: okay, what's the problem? What will happen if I don't do something about it? And then, okay, what do I need to do about it then? What's possible? How can we address this?

[288] Narain, "The Silent Pandemic: Reinventing Approaches to Combat AMR," 13.
[289] "Drug-Resistant Infection," Column 1609.

Hollinrake's reflection on his experiences suggest the value of arguing both urgency and possibility. Further recalling instances of *ineffective* efforts for policy agenda setting, Hollinrake elaborated: "So some people just want to present a problem rather than a solution. And sometimes problems are so thorny that there's no clear solution and then there isn't an ask — but if you've got no ask, you're probably not going to get anything done about it."[290] Clarity on possibilities for solutions, what constitutes the "ask," appears to be an important part of persuading policymakers to pay sustained attention to an urgent problem.

Combining insights from Multiple Streams' concept of coupling with rhetorical lines of argument illuminates why making an urgency-possibility appeal seems a propitious strategy for reports seeking to get an issue onto policy agendas. In Multiple Streams, the problem stream consists of various conditions that policymakers and citizens want addressed. But not all conditions can become policy problems. So, in the problem stream, leveraging urgency to start a line of argument can help transform AMR from a general condition into problem in need of policy attention and action. In the policy stream, however, many ideas are floating around but few ever receive serious consideration. Multiple Streams research has shown that technical and political feasibility are important features of successful ideas in the policy stream — proposals that are or appear to be difficult to implement have lower chances of reaching the agenda and ultimately creating policy change.[291] So, emphasizing possibility as following urgency in the line of argument draws attention to the existence and feasibility of policy-stream solutions to a given problem. If people seeking to catalyse change — i.e., Multiple Stream's policy entrepreneurs — must couple the problem and policy streams to achieve their aims, it makes sense to weave

[290] Kevin Hollinrake, interview with the author, Jan. 29, 2024.
[291] Dolan and Blum, "The Beating Heart of the Multiple Streams Framework: Coupling as a Process"; Herweg, "Explaining European Agenda-Setting Using the Multiple Streams Framework."

together a compound line of argument that speaks to more than one stream. A directional line of argument can help orient readers who are navigating the "organized anarchy" of problem, policy, and politics streams as they flow and intersect. Rhetorician Kenneth Burke provides a useful metaphor to explain this directional element of argument: setting arrows of desire.[292] For Burke, "a work has form in so far as one part of it leads a reader to anticipate another part, to be gratified by the sequence."[293] Burke suggests one powerful form an appeal is to turn an arrow of desire in a certain direction, then have the "plot" follow in the direction of the arrow. For the pattern observed in these AMR policy cases, we can see the report author sets the arrows of desire with the urgency argument (it becomes a problem that must be solved), then satisfies the appetite so aroused with assurances that a solution is possible. As a line of argument, establishing urgency first to create a need, then satisfying that need with the possibility of a solution is an effective persuasive structure for agenda-setting appeals. Furthermore, the line of argument is well-balanced — urgency without positive possibility could lead to despair. Yet, possibility without urgency could lead to *ennui* — inaction, delay or apathy. Tracing the themes of urgency and possibility in these reports reveals that they form a promising line of argument for prospective policy entrepreneurs seeking to advocate for an issue's place on a policy agenda.

In particular, weaving both lines of argument into short, quotable phrases may be a particularly potent way to enact this strategy. This section highlighted the benefits of combining insights from Multiple Streams with rhetorical concepts to elaborate on existing advice in policy by suggesting one promising way to structure arguments (i.e. arguing first for the issue's urgency, then its possibilities), based on successful examples. The strategy is congruent with

[292] Burke focused on the appeal of literature specifically, but his theories of form can be extended to any written or spoken words intended to arouse emotions. Burke, *Counter-Statement*, 123.
[293] Burke, 124.

insights from Multiple Streams regarding the dynamics of the problem and policy streams. Next, looking to Multiple Streams' other elements — such as the policy window and politics stream — can illuminate additional strategies.

Appealing to Moment and Momentum

Each of the report texts features appeals to the opportune timing for action on AMR. Beyond strategic considerations about when the reports were published, the texts appeal to an opportune moment and collective momentum as reasons why AMR warrants policy attention.

A report's timing is certainly important. Across the case studies, people writing the reports emphasized timing as vital when vying to get AMR onto a policy agenda. For example, the O'Neill report team deliberately planned interim and final report publication timing around meetings and events such as the World Economic Forum, the World Health Assembly, and the UN General Assembly. Hala Audi, head of the report team, explained "We wanted to really leverage these events and the G20 cycle to land as many of our recommendations as we could."[294] For the CSE report, project lead Rajeshwari Sinha said her team timed the report around global policy events and the second-ever World Antibiotic Awareness Week: "Because it was the awareness week, we had the most relevant opportunity to pick this up, and we knew that by 2017, the [national] action plans had to come out. So if we were able to formulate something and send it out, then countries would still have time to incorporate."[295] From CSE's experience, Sinha emphasized timing as a critical factor in engaging policymakers on AMR: "The timing has to be right. For example, if COVID is happening, and you are going and campaigning about AMR, nobody will listen to you…If I then go to a policymaker and sit down and give him this

[294] Hala Audi, interview with the author, Oct. 26, 2023.
[295] Rajeshwari Sinha, interview with the author, Sept. 21, 2023.

report. He won't even have the time. I won't say he won't read — he *might* read — but that is not the right time to pitch that work."[296] Sally Davies, current UK Special Envoy on AMR, former Chief Medical Officer for England, and IACG report co-convener, also cited timing as one of several integral considerations when talking to policymakers, based on her decades of experience: "If you want action, some of it's timing and some of it is access…there is absolutely no point in the middle of COVID when they're worrying about 'have you got enough vaccines?' to be talking about AMR… So you need the evidence, you need the story, but the timing matters, and it's absolutely no good if they don't trust you."[297] The IACG secretariat also had to work within timing constraints to deliver the report to the UN Secretary General by their deadline.

These types of strategic considerations of timing represent well-known but hard-to-execute advice in agenda setting. "Have good timing" is easier said than done. Much about timing is beyond the control of those writing reports and seeking to raise awareness of an issue. While they might have some choice in precisely when a report is published (as suggested above), timing is often complicated by a complex array of external factors and unpredictable and uncontrollable events, such as pandemics and outbreaks, wars, and natural disasters. But, authors have relatively more control over what they write in their reports.

For this chapter's focus on rhetorical *choices within a text,* we can explore how time, movement through time, and momentum appear as themes in the reports. In all the case studies, the report texts evoke a sense of the current moment and movement of AMR — most straightforwardly by stating and describing an increasing momentum of AMR as a policy issue. For example, the CSE report states: "The momentum to combat antimicrobial resistance has increased. Following the adoption of 'Global Action Plan on Antimicrobial Resistance' in 2015,

[296] Rajeshwari Sinha, interview with the author, Sept. 21, 2023.
[297] Sally Davies, interview with the author, Apr. 16, 2024.

the tripartite alliance among the World Health Organization, Food and Agriculture Organization of the United Nations and World Organization for Animal Health is supporting member states in the development of National Action Plans to be submitted by mid-2017. The issue has also received global political support at the United Nations General Assembly in September 2016."[298] The report then reiterates: "Across the world, there has been an increase in the momentum to address the threat from rising AMR."[299] By painting a picture of AMR's worldwide momentum, the report implies this attention is warranted and growing — attention begets more attention.

The O'Neill report also includes passages about its specific moment in time, observing momentum since the writing process started, and urging continued momentum: "Progress is already beginning and we are positive about the steps that have been made to tackle AMR in the last year. However, the momentum must be maintained in 2016 and beyond to change the course of AMR, and give us all a brighter future."[300] The O'Neill report explicitly notes that *now* is an opportune moment to act: "There is a golden opportunity this year to make substantial progress in key global forums," and it lists specific, upcoming political events where readers might intervene.[301]

One of the IACG report's areas argues for more global momentum, recommending actions for "raising the profile and urgency of addressing antimicrobial resistance, building and maintaining political momentum and public support. "[302] The IACG report acknowledges progress made, but emphasizes the need to hasten action, writing "efforts to implement national action plans are currently too slow and must be accelerated."[303] The report also notes a guiding

[298] "CSE Report," 5.
[299] "CSE Report," 6.
[300] O'Neill, "Tackling Drug-Resistant Infections Globally: Final Report and Recommendations," 71.
[301] O'Neill, 70.
[302] "IACG Report," 20.
[303] "IACG Report," 6.

principle was to not duplicate past reports, "but instead focus on catalyzing the implementation of earlier recommendations by addressing key gaps and bottlenecks in the current response to antimicrobial resistance." Catalyzing is about causing or accelerating reactions – which ties into language of movement and speed — and the metaphor of bottlenecking adds a spatial element to the principle, adding a sense of "place" and directional velocity to the ideas of time. These report passages leverage time in a different way than arguments of urgency. Rather than emphasizing the lack of time, these passages appeal instead to a sense of momentum and the current moment as reasons why AMR warrants attention as a policy issue.

Kairos and Policy Windows

The concepts of rhetorical *kairos* and Multiple Streams' policy windows help explain how appeals to timing function in the texts.[304] Although they stem from different theoretical traditions, the two concepts are closely aligned. Together, they provide complementary perspectives to better understand how appeals to moment and momentum in policy reports serve as practical, persuasive strategies for agenda-setting.

Kairos is a classical rhetorical concept that encompasses a nuanced sense of timing for persuasion – saying the right thing at the right moment.[305] Although *kairos* is often translated as temporal (i.e., about timeliness or "the right time"), the concept also carries a spatial component. The earliest uses of the ancient Greek word in both archery and weaving referred to *kairos* as pertaining to a "penetrable opening, an aperture," through which an arrow or weaving shuttle

[304] The concept of a window in Multiple Streams is described using slightly different terms throughout the literature, including the "window of opportunity" and "the policy window." Some scholars suggested differentiating between policy "agenda windows," "problem windows" and "decision windows." Here, I use Kingdon's original description to define the overarching idea of a "window" in Multiple Streams as the often-fleeting opportunity to merge or couple the three streams and, in turn, induce agenda setting.
[305] Sipiora and Baumlin, *Rhetoric and Kairos*.

could pass.[306] Like shooting an arrow at the right moment, with the right direction and velocity to hit a moving target, *kairos* involves how one's rhetorical choices both influence and respond to a particular moment. The interplay of situation and action is what makes *kairos* a useful concept, because it "refers not to the specific responsiveness of discourse to situation but to the dynamic relationship between discourse and situation, to the qualitative nature of the situation itself as it is shaped in and by discourse."[307] *Kairos* is thus a central idea for rhetorical interpretation of texts in context, by foregrounding questions of the right time and place for persuasion in a particular situation.[308]

Public policy scholars describe policy windows in ways closely aligned with rhetoricians' descriptions of *kairos*. For example, policy researcher Paul Cairney has argued that the policy window is "best described as akin to a space launch in which policymakers will abort the mission unless every relevant factor is just right. Some factors are not in the gift of humans (such as the environmental conditions), but others are (such as the choices we make on technology, resources and the rules governing lift-off)."[309] This metaphor offers a modern version of the ancient Greek's arrow-shooting, but retains the key idea of dynamic interplay between situation and action. In Multiple Streams, windows open based on a complex mix of factors, and then a policy entrepreneur must take advantage of the opening to advance their desired policy changes. While *kairos* pertains to all rhetorical situations, the concept of a window in Multiple Streams denotes a more specific focus on policy situations.

The concepts of *kairos* and policy windows jointly underscore that timing is important for successful agenda-setting. But, they can also both help to illuminate *how* textual appeals to

[306] Miller, "Opportunity, Opportunism, and Progress."
[307] Miller.
[308] Miller, "A Rhetoric of Doing"; Kinneavy, "Kairos: A Neglected Concept in Classical Rhetoric."
[309] Cairney, "Three Habits of Successful Policy Entrepreneurs," 201.

moment and momentum work as persuasive strategies in the case study reports. My observations in the case studies suggest that explicitly appealing to the *kairos*/window of a policy issue (such as AMR) for an audience is a promising rhetorical strategy when writing for policy agenda setting. For the three AMR reports, their reception evidence enables further analysis of how the observed written moves to highlight a *kairotic* sense of a policy moment and momentum were received by their audiences.

Overall, each report succeeded in its aim of garnering policymaker attention and getting AMR on policy agendas in ways that supported action. (See Chapter 2.) Although it is not possible to make direct claims that any one rhetorical move caused policy change, there are traces in the reception evidence that suggest appealing to moment and momentum resonated with the reports' readers. Citing the O'Neill report in a debate, the Parliamentary Under-Secretary of State for Health Lord Prior of Brampton said, "The report from my noble friend's review has now given us the opportunity to reinvigorate and strengthen key elements of our existing [AMR] strategy. New ambitions announced at the G7 leaders' summit in May this year, and by our new Prime Minister at the G20 last week, are an example of the immediate effect of the review."[310] Echoing the O'Neill report, Lord Brampton presents the current moment as an opportunity for national policy strengthening, set within the context and momentum of other specific political events.

For the IACG report, arguments of *kairos* were pulled from the report and highlighted in its official press release and subsequent media coverage, when Dr. Tedros Adhanom Ghebreyesus, Director-General of the WHO, was quoted as "describing this moment as a

[310] "Drug-Resistant Infection," Column 1608.

'critical point in the fight to protect some of our most essential medicines.'"[311] The IACG report's appeals to maintain and accelerate momentum have persisted as recurring arguments for and by policymakers in the years since its publication. For example, the AMR Global Leaders Group of high-level heads of state and senior government officials has repeatedly emphasized that building and maintaining "political momentum and visibility of the AMR challenge on the global agenda" is a key goal and accomplishment.[312]

For CSE, India's policy responses also deploy arguments of momentum. While not directly attributable to the CSE report, mentions of momentum suggest the alignment and resonance of an argument for the critical moment for action within existing policymaker discourse. For example, the Indian National Action Plan on AMR notes the existing political momentum and current opportunity, writing: "The recent political declaration/UN resolution on AMR following the high level meeting on AMR at the United Nations General Assembly is an opportunity for the technical leadership in India to leverage the current conducive policy environment for effective action against AMR."[313] Reflecting and deploying these types of arguments — that *now* is a good time and place for policy action — seems a savvy rhetorical strategy for those arguing about AMR agenda-setting.

The rhetorical concept of *kairos* helps to explain why appeals to a moment or momentum can be effective. These reports are not just delivered in one moment to one audience — they are posted and circulated digitally, and delivered to multiple audiences over time.[314] In other words,

[311] Fletcher, "'No Time To Wait' – AMR Could Cause 10 Million Deaths Annually By 2050, Warns UN Report"; "Joint News Release: New Report Calls for Urgent Action to Avert Antimicrobial Resistance Crisis."
[312] "Prominent Global Leaders in Science, Industry and Government Meet to Step up Fight against Antimicrobial Resistance"; Andersen, "Water, Air and Soil Pollution Is Spawning Deadly Superbugs"; Barbados, "PM To Co-Chair Antimicrobial Resistance Group"; "COVID Cases Surge amid Growing Threat from Antimicrobial Resistance - WHO Chief."
[313] "National Action Plan on Antimicrobial Resistance (NAP-AMR) 2017-2021," 16.
[314] Soderlund, "Catalyzing Persuasion: Toward a Theory of Kairos and Repetition"; Rude, "Toward an Expanded Concept of Rhetorical Delivery"; Eyman, "Digital Rhetoric: Ecologies and Economies of Circulation."

the report texts are delivered and received in and across many different moments. Despite this extended rhetorical situation, the reports can still create a sense of *kairos* for their readers by textually constructing AMR as an opportune and escalating issue on policy agendas. By explicitly arguing about the current opportunity and progress toward action, the texts help to create a *kairotic* moment and sense of collective momentum for readers.

Further, considering Multiple Streams' politics stream and its element of political mood, the strategy of writing about momentum and movement makes sense both to document and potentially bolster a political zeitgeist. Writing about political momentum in these cases might help persuade other policymakers to be swept along in the stream's current of AMR awareness. Emphasizing that many political actors are already paying attention to AMR is a promising strategy to attract further attention — if others consider AMR important, it must be so. While Multiple Streams scholarship focuses more on windows in terms of *when* a policy entrepreneur acts, the case study observations suggest that policy entrepreneurs can rhetorically highlight the *existence* of a policy window as a persuasive strategy in texts they write. Each issue, however, continually competes for its spot on the policy agenda among policymakers with finite attention. As we will see in the next section, strategies to help policymakers make sense of an issue also have implications for persuasion.

Numbering and Strategic Repetition

Each of the case study reports enumerates key areas for action on AMR. Since all texts and reports must have some type of organizing structure, it can be easy to overlook the impact of arrangement choices on the overall persuasiveness of a text. Considering the rhetorical functions of arrangement and the texts' purpose to amplify AMR, this strategy of dividing, listing and

numbering solutions to AMR is one way to make the complex issue more comprehensible, and thus more palatable to prioritize as an issue on policy agendas.

The O'Neill report offers 10 numbered intervention areas. These 10 interventions are organized into two broader categories — interventions on the supply side of AMR, and interventions regarding demand. Readers encounter the O'Neill report's 10 interventions first listed in its table of contents, then mentioned in the foreward (where four interventions of the 10-point plan are highlighted), before being listed again in the executive summary, replicated in a full-page graphic, repeated on introductory pages to each section, extrapolated in each intervention section, and finally summarized again at the end. The report text explains, "These interventions are the Review's way of breaking up the problem of AMR into manageable parts."[315] The choice of having 10 interventions was informed by an interim op-ed Jim O'Neill penned for *The Times*,[316] where he outlined 10 recommendations and received a positive response to the listing approach. O'Neill report team member Anthony O'Donnell explained, "that op-ed did get a lot of traction because it was the first time we tried to put together kind of a coherent vision, and in 10 clear points."[317] Based on positive reactions to the op-ed, the team decided to keep the 10-point intervention format for the final report. Since report publication, O'Neill has often used and referenced the 10 interventions as his "10 commandments" or the "10 commandments of AMR."[318] In addition to the 10 interventions, throughout the O'Neill report the text makes prolific use of numbering to organize its content into shorter lists of two to four items, like listing "two gaps" in surveillance, "three strands" of data that need to be analysed to

[315] O'Neill, "Tackling Drug-Resistant Infections Globally: Final Report and Recommendations," 16.
[316] O'Neill, "Ten Ways to Kill Our Antibiotics Complacency; Public Ignorance about the Worldwide Danger of Superbugs Could Cost Millions of Lives."
[317] Anthony O'Donnell, interview with the author, Sept. 25, 2023.
[318] "Oral Evidence: Antimicrobial Resistance, HC 962," 5; Cueni, O'Neill, and Outterson, "Webinar: Creating a New Generation of Antibiotics."

understand the epidemiology of AMR, and "four challenges" to establish a firm estimate of the costs of surveillance, among dozens of other ordinal numbered listings in the text.[319]

The IACG report has five recommendation sections, ordered with a lettered list A through E. Each section contains two to four numbered recommendations. The sections and recommendations are first listed at the start of the report and then repeated with elaborating details and considerations. The sections are also displayed in a graphic.[320] This final set of five sections was just one of many viable possibilities. IACG production documents show there were many alternative arrangement options, such as "three main ways" to tackle AMR, 14 different "content areas" describing necessary actions, or five different "levers" for action.[321] IACG secretariat director Haileyesus Getahun noted the final number of recommendations was top-of-mind for him during the report development, and that the original aim was to have "not more than 20 pages, not more than 10 recommendations."[322] The group ended up with slightly more recommendations than he had wanted. As he put it, "our original idea was actually to have 10 recommendations but finally you know it went into 14," jokingly adding, in reference to the O'Neill report's list, "so it wouldn't contradict with the 10 commandments."[323] For the IACG report, its authors aimed to keep the text and numbered list of recommendations constrained, doing so by dividing them into 5 sections, each with only a few numbered recommendations.

The CSE report is organized around three "areas" or "themes" for guidance on animal and environmental AMR policy: responsible antibiotic use in food animals; surveillance of antibiotic use, residues, and resistance; and environmental management to contain antimicrobial resistance. These three areas are listed in the table of contents, and repeated in the forward and

[319] O'Neill, "Tackling Drug-Resistant Infections Globally: Final Report and Recommendations," 27, 32, 34.
[320] "IACG Report," 9.
[321] McKinsey & Company, "AMR Framework for Action Supported by the IACG: Working Document."
[322] Haileyesus Getahun, interview with the author, Sept. 11, 2023.
[323] *Antimicrobial Resistance*, 2019, at 31:57.

the introduction, before serving as the headings for three summary sections, and then as the headings to break up the matrixed table of recommendations. The areas are repeated five times throughout the 21-page report. The CSE report team carefully selected these three areas before their expert workshop. CSE report project lead Rajeshwari Sinha explained "We tried to create a template so that we can do some group work activities and have their inputs…which we are able to document and structure and take it forward…What are those areas we want to focus? So you'll see that we focused on surveillance, we focused on environment, we focused on responsible use. These were the broad areas we picked. We thought, what are the kind of policies you want to have? What are the kind [of] implementing measures? All these kinds of layers." The three categories CSE selected informed the development of the report's content, and structured its format.

In policy reports, using headings and subheadings to structure content is standard practice. But in these case studies, the fact that certain sections are counted or labeled with numbers or letters is significant: doing so makes a complex subject seem manageable by narrowing it down to items a reader can count on their hands. Furthermore, existing advice repeatedly recommends brevity and concision as key in communication for busy policymaker audiences. Yet, rather than listing key ideas once, these reports reinforce them through repetition in lists, headings, and summary sections. The rhetorical concept of amplification helps explain these patterns, particularly in light of Multiple Streams' assumption of bounded rationality — i.e., that policymakers necessarily ignore most problems.

Amplification and Bounded Rationality

In rhetoric, amplification refers to the group of methods that "has to do with increasing the profile of a line of argument to make it more psychologically salient to the audience and

more conceptually important in the overall case."[324] Rhetorical amplification is an umbrella term for a set of rhetorical techniques that intensify a point's importance or expand its presence in a text or speech.[325] Gideon Burton's online rhetorical resource *Silva Rhetoricae* describes amplification as "a central term in rhetoric**,** naming a variety of general strategies as well as some very specific procedures or figures of speech."[326] Today, most associate amplification with sound volume, but rhetorical amplification relates to intensification or magnification of an issue, including how much space it takes up. In Kenneth Burke's influential *Rhetoric of Motives,* he argues that "of all rhetorical devices the most thoroughgoing is amplification (Greek, *auxesis*)," because of its persistence through rhetorical theory and wide range of meanings.[327] Different methods and meanings for amplification, however, are unified by a common purpose: to bring an audience's attention to desired points or parts of a broader text (be it spoken or written).[328]

The category of amplification offers (conservatively) dozens of specific rhetorical figures and moves that are known to help draw audience attention to key points.[329] The strategy of repeating numbered listings combines two of these means of amplification: *eutrepismus* and repetition. *Eutrepismus* is the numbering or ordering of a series of phrases that are under consideration (*ordinatio* in Latin), before explaining them in more detail.[330] It is used to structure arguments and speeches more clearly, making them easier for an audience to understand and follow. *Eutrepismus* is commonly used today, and can have the effect of making speakers or writers seem more authoritative and organized. The enumeration can suggest an exhaustive,

[324] Fahnestock and Tonnard, "Amplification in Strategic Maneuvering," 105.
[325] Killingsworth, Gilbertson, and Chew, "Amplification in Technical Manuals"; Kennedy, "Auxesis."
[326] "Figures of Amplification."
[327] Burke, *A Rhetoric of Motives*, 69.
[328] Church, "Amplificatio, Diminutio, and the Art of Making a Political Remix Video: What Classical Rhetoric Teaches Us About Contemporary Remix."
[329] Burton, "Figures of Amplification"; Lanham, *A Handlist of Rhetorical Terms; a Guide for Students of English Literature*.
[330] Burton, "Eutrepismus"; Peachum, *The Garden of Eloquence*.

comprehensive itemization (even if the list only contains two elements).[331] By dividing and ordering an argument, *eutrepismus* amplifies it in three ways: first, by expanding its presence; second, by improving clarity; and third, by making it feel complete, systematic, and rigorous (with this sentence serving as an example of *eutrepismus*). In the case studies, *eutrepismus* enables repetition across the reports' text, graphics, and structural elements (e.g., tables of contents, headings). The reports' use of *eutrepismus* creates an ordered policy agenda for AMR as an issue. Then, the reports repeat the numbered listings throughout for added emphasis. Repetition can also be a powerful form of amplification, because it emphasizes what is being repeated and can create the impression the restated points are important.[332] Amplification by accumulation (in Latin, *accumulatio*) considers how the piling up of points — including their repetition — can create a persuasive effect. Repetition can aid comprehension, as "restatement helps readers understand the concept."[333] Repetition can also serve as a memory device: if you repeat something enough times, it really sinks in.

Combining rhetorical ideas of amplification (specifically *eutrepismus* and repetition) with Multiple Streams' fundamental assumption of policymakers' limited attention helps make sense of these observations and add nuance to existing advice on brevity. Multiple Streams is premised on the idea that policymakers necessarily ignore most issues due to limited time and resources. So, "be brief" is sensible and common advice to those seeking to gain policymaker attention and influence agendas.[334] But, with a complex issue like AMR, ordering, elaborating and repeating parts of the issue may — counterintuitively — help amplify readers' attention on the issue as a whole despite increasing a text's length. Like Multiple Streams' concerns with limited

[331] Lawrence, Visser, and Reed, "Harnessing Rhetorical Figures for Argument Mining."
[332] Perelman and Olbrechts-Tyteca, *The New Rhetoric*.
[333] Laib, "Conciseness and Amplification," 449.
[334] Cairney, "Three Habits of Successful Policy Entrepreneurs."

policymaker attention, rhetorical amplification entails a "central concern for audience exhaustion," and considers how to accumulate points in ways that intensify desired persuasive effects without exhausting readers or listeners.[335] Further, Multiple Streams researchers have observed that dividing a policy move into stages — termed "salami tactics" — can be a successful strategy to advance an issue with policymakers.[336] *Eutrepismus* offers a helpful link between this empirical observation and broader rhetorical theories of amplification via figures of division and listing.

In these written reports, the use of *eutrepismus* and repetition seems to help spotlight key ideas in the reports while also amplifying agenda-worthiness and attention to the issue (AMR) overall. For those busy policymakers scanning a report, the structure and headings quickly convey a sense of the issue and its solution to aid comprehension. The lists help make the large, complex "super wicked" problem of AMR seem more comprehensible for busy policymakers by demonstrating it is divisible into well-ordered parts.

Reception evidence suggests that policymakers and media pick up on and use the reports' repeated, numbered lists. Importantly, the use of *eutrepismus* provides those summarizing the reports with clear and consistent points to amplify in their own coverage or discussions of AMR. For example, the O'Neill report's 10 points structured the UK Government's response, which used the same numbered list to structure their response and set out "our position on each of the Review's recommendations."[337] The UK House of Commons Library's briefing paper to policymakers notes the final report "made 10 recommendations on tackling AMR globally" before listing each. In this way, the list shaped what was responded to and summarized from the

[335] Bradshaw, "Rhetorical Exhaustion and the Ethics of Amplification."
[336] Zahariadis, *Ambiguity and Choice in Public Policy: Political Decision Making in Modern Democracies*, 15.
[337] HM Government, "Government Response to the Review on Antimicrobial Resistance," 4.

report. UK MP Sharon Hodgson referenced the report and its *eutrepismus* in a government debate, noting, "The review's 10 recommendations show just how complex and multifaceted the issue is and how wide-scale the actions needed to address it are," before advocating for policy action.[338] For Hodgson, the O'Neill report's *eutrepismus* seems to have effectively amplified the complex nature of AMR as an issue warranting policy attention, while instilling confidence in the comprehensiveness of its recommended solutions. Media coverage also frequently uses the 10 interventions and categories to describe and summarize the O'Neill report. Examples include: "the 80-page report contains 10 major proposals,"[339] "The report details ten steps governments around the world can take to address the issue,"[340] and "Lord O'Neill set out a 10-point blueprint."[341] The 10 points help media accurately summarize the report, and also direct what is then covered in the articles — an important aspect of agenda setting. For instance, after describing the scope of the AMR problem, *The Atlantic's* feature article on the report turns to the enumerated list as a reason for hope, writing "And yet, resistance is *not* futile. O'Neill's report includes ten steps to avert the crisis."[342] Then, the high-profile article proceeds to cover each of the 10 recommendations — literally amplifying each recommendation using bolded text. The listing also seems to help media avoid over-simplifying the issue of AMR. Echoing the "10 fronts" listed in the report, *The Economist's* coverage notes, "Because antimicrobial resistance has no single solution, it must be fought on many fronts."[343] In policymaking contexts, being able to easily summarize the number of recommendations and areas can help make the massive

[338] "O'Neill Review (Volume 622)," Volume 622.
[339] McKenna, "How To Prevent Millions of Deaths from Failing Antibiotics."
[340] Bazley, "Superbug Threat Requires Urgent Action."
[341] Asthana and Boseley, "UK Doctors Told to Halve Inappropriate Antibiotic Prescriptions by 2020."
[342] Yong, "The Plan to Avert Our Post-Antibiotic Apocalypse."
[343] "When the Drugs Don't Work," May 20, 2016.

issue of AMR seem more comprehensible and its solutions clearer, while mitigating risks of oversimplifying to single, silver-bullet solutions.

Beyond their immediate benefits for amplification, the repeated, numbered lists can also aid agenda setting by providing a rubric to assess progress — in other words, serving as a rhetorical strategy to *keep* AMR on the agenda longer-term. For example, a Chatham House review several years later summarized that the O'Neill report "made 10 main recommendations covering the broad range of actions it considered were required to address the imminent threat posed by AMR"[344] and then evaluated progress from 2016 to 2019 in each of 10 recommended areas. Other audiences in the policy ecosystem also picked up on this structure. In December 2018, for example, a special issue of *Microbiologist* magazine was published detailing the progress made on O'Neill's "Ten AMR Commandments,"[345] using the 10 areas as themes to organize the articles.

For the CSE report, its three heading areas or "themes" are referenced in summaries of the report, amplifying its overall message by creating a sense of those areas as important, comprehensible, and comprehensive. For example, the global AMR advocacy network, ReAct, notes the workshop that created the report "entailed intense discussions among working groups, across the three themes" and mirrors the report's language, noting "critical areas of discussion involved responsible antibiotic use in food animal production, surveillance of antibiotic use and antibiotic resistance and addressing the environmental aspect of the antimicrobial resistance problem."[346] In terms of lasting impact, the CSE report's three thematic areas were picked up and replicated as a framework to structure AMR policy recommendations. Functioning as a

[344] Clift, "Review of Progress," 4.
[345] Sainsbury, *Microbiologist*.
[346] "International Workshop on National Action Plan on AMR for Developing Countries – 2016."

national "Antimicrobial Resistance Hub," the Indian Council of Medical Research - National Institute of Cholera and Enteric Diseases, duplicated the CSE report's three areas in its 2022 *Priorities for the Environmental Dimension of Antimicrobial Resistance in India*, which aimed to inform India's National Action Plan updates. The report described the CSE report's three areas, "Responsible antibiotic use in food animals," "Surveillance of antibiotic use, Residues and Resistance," and "Environmental Management to Contain AMR" in a table that "encompasses the conceptual framework for environmental management in India."[347] This continued circulation and use of CSE's *eutrepismus* on India's policy agenda for AMR suggests it is a resonant amplification strategy for those themes. Structuring the problem of AMR seems an important rhetorical function of these reports, in how the numbering, ordering, listing and repetition create a sense of the issue for policymakers.

For the IACG report, reception evidence demonstrates that its five areas permeate a variety of contexts. In media articles, the listing can help reporters simply summarize the report, with statements such as "This present report recommends five steps to combat antimicrobial resistance," before listing each section in order.[348] The report's *eutrepismus* contributes to a sense of its completeness. One article, for example, states that "The new report is perhaps the most comprehensive blueprint yet produced on the issue" and illustrates the five areas in a graphic.[349] The IACG report's *eutrepismus* is also echoed in subsequent summaries and presentations by IACG members, who continued to highlight the "five categories" or "five areas" of recommendations when explaining the report's importance and contributions.[350] In policy discussions, the five areas can serve as a guiding structure. For example, the inaugural meeting

[347] This institute is based out of India's Federal Department of Health Research, in the Ministry of Health and Family Welfare.
[348] Mandal, "United Nations Sounds Alarm Bell on Drug-Resistant Infections."
[349] Fletcher, "'No Time To Wait' – AMR Could Cause 10 Million Deaths Annually By 2050, Warns UN Report."
[350] Cars, "Global Governance of AMR - beyond the IACG Recommendations?," 9; So, "Catalyzing Policy Action to Address Antimicrobial Resistance: Next Steps for Global Governance," 2.

of the Global Leaders Group on AMR used the IACG report's *eutrepismus* as an organizing structure for their planning by noting: "The five categories of the IACG recommendations (accelerating progress in countries; research and development and innovations to secure the future; enhancing civil society and private sector engagement; investments and sustainable financing; and strengthening global governance with accountability) should provide the overall structure for the action plan."[351] For the group of policy leaders, the report's ordering offers the means to organize their action planning — it provides structure and order to a highly complex policy area with recognizable and easily countable categories.

The IACG report, however, suggests limits to the strategy of *eutrepismus:* its 14 total recommendations seem too many to produce persuasive, agenda-setting effects through amplification. While the *five* overarching categories are frequently referenced, the 14 recommendations are usually only partially summarized with example lists. In launching the report, the IACG (or its publicists) seem to recognize this limit, and picked four out of the 14 recommendations to highlight in a bulleted list. Those four points listed in the press release were then amplified across media coverage.[352] This aligns with research on media practices, which observes that busy reporters tend not to read the full report but instead scan and copy content from the press releases.[353] But, even for media coverage that does not simply copy the press release, those summarizing the IACG report tend to follow a similar pattern of pulling no more than a handful of example recommendations (without providing the full list or mentioning the total of 14 recommendations).[354] While the five categories are repeated to help summarize and

[351] Global Leaders Group on AMR, "Final Report of the Inaugural Online Meeting of the Global Leaders Group on Antimicrobial Resistance," 2.
[352] "UN, Global Health Agencies Sound Alarm."
[353] Comfort, Gruszczynski, and Browning, "Building the Science News Agenda"; Vonk, Bos, and van Sebille, "Journalism Versus Churnalism."
[354] IISD, "Interagency Group Identifies Antimicrobial Resistance Threat as Formidable but Not Unsurmountable"; Atieno, "Urgent Action Needed to Avert Antimicrobial Resistance Crisis."

structure subsequent discussions on AMR, the 14 recommendations may be too many to repeat and summarize for this rhetorical purpose. Cognitive psychology and memory research suggests the "magical" number of items for memorable lists or meaningful chunks of information is somewhere between four and nine.[355]

For report-writers, the deceptively simple takeaway is to make a report's points easy to list and summarize. What can be most easily scanned, repeated and remembered? *Eutrepismus* and repetition as a rhetorical strategy makes sense in light of Multiple Streams' core assumption of policymaker's bounded rationality, for how they draw attention to key parts of AMR as a policy issue. This strategy of repetition for numbered listings offers a complement to conciseness, by making key points "collapsible" in an easy-to-summarize list. The repetitions of the lists and elaboration of each part adds a copiousness and sense of accumulation to the reports, which can amplify the issue of AMR in a different but complementary way. However, the number of listed items may have a natural limit.

Evidence from the reports' production indicates authors did consider their section and heading choices, but Multiple Streams and rhetorical insights suggest even more careful consideration could be beneficial. Thinking about sections through the lens of rhetorical amplification (and specifically repetitions with the figure of *eutrepismus*) centers those choices as particularly important in subsequent reception. Starting with the end in mind when crafting numbered lists of categories and recommendations, and looking for opportunities to repeat and restate relatively short *eutrepismus* as sense-making structures throughout a report are promising approaches for writers.

[355] Gignac, "The Magical Numbers 7 and 4 Are Resistant to the Flynn Effect"; Baddeley, "The Magical Number Seven."

Implications of Strategies *Retitle section to make more sense

The strategies observed in these texts contribute to a repertoire of persuasive techniques, but no one — not me, the report authors, or rhetoricians — would claim that text-level strategies alone can set a policy agenda. What these strategies can do, however, is highlight areas where authors should give extra intentional consideration to their choices, with example ways to approach similar rhetorical situations.

For those familiar with Multiple Streams, one notable omission from this chapter has been an analysis of framing: the choices made to highlight and omit different aspects of any issue when defining it as a problem on policy agendas.[356] While a rhetorician may be more likely to label this concept with Burke's phrasing of "terministic screens" or an analysis of metaphors, figures, and tropes, a similar interest in the implications of framing also permeates rhetorical analysis.[357] By not focusing on framing in this chapter, I miss an opportunity to say interesting things about how the reports present AMR as an issue, and the implications of those framings for readers. For example, the O'Neill report's definition of AMR as an economic issue was likely a strong factor in its awareness-raising success. Likewise, the IACG and CSE reports' framing of AMR as a quintessential One Health issue likely influenced their impact.[358] I can offer three justifications for not focusing on framing. First, any study must have limits; a focus on framing would require so much space that I could not highlight other interesting rhetorical observations. Second, there are already many studies of AMR framing and problem definition specifically, and

[356] Knaggård, "Framing the Problem: Knowledge-Brokers in the Multiple-Streams Framework"; Stone, *Policy Paradox*; Kingdon, *Agendas, Alternatives, and Public Policies, Update Edition, with an Epilogue on Health Care*; Zahariadis, *Handbook of Public Policy Agenda Setting*.
[357] Burke, "Terministic Screens"; Fahnestock, "Rhetorical Citizenship and the Science of Science Communication."
[358] One Health is defined by the WHO as an integrated, unifying approach that aims to sustainably balance and optimize the health of people, animals and ecosystems, by recognizing that that the health of humans, domestic and wild animals, plants, and the wider environment (including ecosystems) are closely linked and interdependent. "One Health."

a rich body of work on framing policy problems.[359] But there are not as many scholars concentrating on the other strategies that I identified in this chapter. Third, this scope choice lets me focus on how report authors can argue for attention their chosen issue framing – whatever that framing might be. In other words, the strategies explicated above can complement existing work on framing, because they can bolster persuasiveness of any chosen frame, whether a report aims to frame AMR in economic, holistic (i.e. One Health), geopolitical or any other terms.

This chapter illustrates how rhetorical scholarship's analytical vocabulary can integrate with insights from Multiple Streams to support the study and practice of agenda setting in policy texts. For researchers, ideas from both areas can advance theorizing about agenda-setting policy processes — for example, by highlighting strategies of linear argumentation, critical timing, and enumerated amplification, and analyzing how they work in different contexts. For practitioners, the identified strategies offer theoretically grounded yet flexible heuristics to inform agenda-setting communication choices while considering the particulars of a given situation.

[359] Rochefort and Cobb, *The Politics of Problem Definition*; Kamenshchikova et al., "Anthropocentric Framings of One Health"; Wellcome Trust, "Reframing Resistance: How to Communicate about Antimicrobial Resistance Effectively"; Hannah and Baekkeskov, "The Promises and Pitfalls of Polysemic Ideas"; Degeling et al., "Changes in the Framing of Antimicrobial Resistance in Print Media in Australia and the United Kingdom (2011–2020)"; Nerlich and James, "'The Post-Antibiotic Apocalypse' and the 'War on Superbugs'"; Chandler, "Current Accounts of Antimicrobial Resistance."

Chapter 5. Equipping Readers: Report Composition Heuristics for Rhetorical Use

Introduction

Every year, hundreds of thousands of reports are written to influence public policy. These policy reports fall into the category of *grey literature*: documents produced at all levels of government, academia, advocacy, and industry that are protected by intellectual property rights but not controlled by traditional publishers.[360] Grey literature is "posted, not published" — shared online by its authoring organizations, largely outside of systems of scholarly indexing and cataloging.[361]

These grey literature reports play a vital role in policy processes, making headlines, influencing debates, and serving as intermediary links between academic sources and broader policy audiences.[362] But, impact varies — while some reports achieve their goals, many are largely ignored, sitting unused on a dusty shelf or languishing in a metaphorical filing cabinet.[363] Whether successful or not, grey literature represents a massive global investment of time and resources to produce.[364] One study estimated that — in Australia alone — grey literature creation costs $22 billion per year, mostly funded with public dollars.[365] A need to better harness and systematically use grey literature has led to the creation of databases such as Policy Commons, which includes over 17 million documents from nearly 41,000 organizations.[366]

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[360] These are documents produced by a body where publishing is not their primary activity. This definition draws from sources including: Green, "Wait! What?"; Schöpfel, "Towards a Prague Definition of Grey Literature"; Yoshida et al., "Beyond Academia."
[361] Green, "The Chasm between the Scholarly Record and Grey Literature."
[362] Bornmann et al., "How Relevant Is Climate Change Research for Climate Change Policy?," 22; Lawrence, "Influence Seekers"; Green, "Grey Literature Is Booming. It's Time to Turn It into an Asset."
[363] Doemeland and Trevino, *Which World Bank Reports Are Widely Read?*
[364] Lawrence, "Influence Seekers."
[365] Lawrence.
[366] "Policy Commons"; Another database, Overton, also indexed over 17 million documents as of January 2025 "Welcome to Overton."

Despite the quantity and observable impacts of at least some policy reports, academic engagement with these documents remains scant. Grey literature is notoriously difficult to find and search, so it is often missed as a *source of knowledge* for inclusion in systematic scholarly reviews.[367] Grey literature is also relatively neglected by academics as *an object of study.* Research on the persuasive features and functions of policy reports remains disproportionately limited in fields such as rhetoric, technical communication and writing studies. The studies that do focus on grey literature in public policy debates reveal important and interesting rhetorical dynamics.[368] In her work across technical communication and rhetoric, for example, Carolyn Rude has analyzed the "homely genre" of reports written for environmental policy decision-making and their use over time.[369] She illustrates how these reports serve as strategic tools for advocacy and describes key characteristics of the genre, including a strong future orientation and a focus on usability.[370] Rhetorical studies of the Intergovernmental Panel on Climate Change (IPCC) reports reveal rhetorical opportunities and challenges for public science communication and policy influence.[371] Other scholars have analyzed narratives or terministic screens in after-action or post-crisis reports, demonstrating multiple ways these documents can influence public discussion of tragic events.[372] While existing studies on reports offer valuable insights, they also suggest there is much more to learn about the rhetorical role and functions of grey literature reports in public policymaking.

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[367] Adams et al., "Searching and Synthesising 'Grey Literature' and 'Grey Information' in Public Health"; Mahood, Van Eerd, and Irvin, "Searching for Grey Literature for Systematic Reviews"; Saleh, Ratajeski, and Bertolet, "Grey Literature Searching for Health Sciences Systematic Reviews."
[368] e.g., Weech, "Changing Climate, Changing Terrain"; Brockman, *Twisted Rails, Sunken Ships*; Leake, "Science as Sound Bites"; Weber, "Stasis in Space! Viewing Definitional Conflicts Surrounding the James Webb Space Telescope Funding Debate."
[369] Rude, "Environmental Policy Making and the Report Genre," 78; Rude, "Toward an Expanded Concept of Rhetorical Delivery"; Rude, "The Report for Decision Making."
[370] Rude, "Environmental Policy Making and the Report Genre."
[371] Walsh, "Before Climategate"; Mehlenbacher et al., "Proleptic Logics in Media Coverage of the IPCC Sixth Assessment Report"; De Pryck, "Intergovernmental Expert Consensus in the Making."
[372] Miller, "The Presumptions of Expertise"; Dombrowski, "The Two Shuttle Accident Reports"; Boudes and Laroche, "Taking off the Heat"; Rice and Bloomfield, "Commemorating Disorder in After Action Reports."

When authors of AMR grey literature reports are asked about their goals, a clear theme emerges across the three cases: authors aim to "raise awareness and support" for AMR policy action.[373] Reflecting on the purpose of these documents, authors observe that "these reports can raise political visibility, and support awareness-raising in general."[374] Reports are seen as a way to "put the issue on the table" and bring key topics "into the global conversation."[375] While there may be additional goals, "to create awareness on the issue" of AMR remains a central aim of the reports.[376] For example, when asked why she encouraged the UK Government to commission the O'Neill report and what she hoped the report would accomplish, AMR champion Sally Davies explained: "I hoped that it would raise awareness and understanding, not just what AMR is, but the impact, and therefore the need to take action."[377] For these reports, raising awareness — as a means to spark policy action — is clearly a key goal. The theme is echoed in broader surveys of scientists who choose to communicate publicly: "When asked, many scientists say their goal is to raise awareness or interest in an issue or new research."[378] In science communication research and practice, raising awareness of key issues is often a de facto goal of grey literature reports.

However, closer consideration of reports in policy settings presents a persuasion paradox: reports purportedly aim to raise awareness and persuade readers to act, yet their readers are largely those already aware and persuaded. In the practical context of policymaking — where thousands of reports on various topics are produced each year — it seems highly unlikely that policymakers have time, opportunity, or interest to read reports on entirely unfamiliar issues. In fact, when public policy scholars asked state legislators how advocates for change convinced

[373] Anthony McDonnell, interview with the author, Sept. 25, 2023.
[374] Tim Corrigan, interview with the author, Apr. 25, 2024.
[375] Sunita Narain, interview with the author, Nov, 8, 2023.
[376] Maria Helena Semedo, interview with the author, June 27, 2024.
[377] Sally Davies, interview with the author, Apr. 16, 2024.
[378] Besley and Dudo, *Strategic Science Communication*, 15.

them to act on issues related to disaster policy, many policymakers responded that they did not need to be convinced — they already agreed with the need for action.[379] If most actual readers of policy reports are already aware of the issues addressed in the report, what rhetorical function do these texts serve in policy discourse and processes?

In this chapter, a textual-intertextual analysis of the three case studies helps to address this puzzle, drawing on rhetorical concepts of circulation, recomposition, and extended delivery. Rhetorical analysis reveals that these reports function not primarily as tools of direct persuasion but as enduring tools of ongoing policy discourse. Reports can be circulated, recomposed, and re-delivered over time, influencing discussions and decisions beyond their initial publication. In other words, these texts persist long beyond their immediate moment of publication, and provide rhetorical resources that equip readers to make their own arguments.[380]

Rhetorical concepts can helpfully illuminate this function theoretically, but unless a rhetorical study offers actionable guidance for the practitioners writing reports, it is unlikely to inform practice. Existing rhetorical studies increasingly examine how texts circulate, but they rarely address how reports might be designed deliberately to optimize their future utility. This is an oversight, especially because studies of the science communicators who write reports targeting policy audiences find that many of those communicators currently "start with a limited perspective on the strategic choices they have available when it comes to tactics, objectives, and goals," akin to "a musician playing only two chords or a chef cooking with only two ingredients."[381] More practice-oriented guidance about a wider range of rhetorical goals is

[379] Anderson, DeLeo, and Taylor, "Policy Entrepreneurs, Legislators, and Agenda Setting."
[380] In this chapter, I define rhetorical resources broadly as the stock or supply of information, arguments, and other assets that can be drawn on by a person or organization in order to argue effectively.
[381] Besley and Dudo, *Strategic Science Communication*, 9.

needed. To that end, analysis of the case studies in this chapter uncovers promising ways that writers can increase the utility of their policy reports for subsequent rhetors.

In the rest of this chapter, I first overview interrelated concepts that help us better account for reports' rhetorical functions over time: ideas of rhetorical circulation, composing for strategic recomposition, and expanded delivery. For each, I highlight what they contribute to our understanding of reports in policy deliberation, and note current challenges of actioning those insights in practice. Next, I trace how the case study reports circulated in the years following their publication. Doing so reveals three themes of post-publication report use — use for information, for citation, and for landmarking — and provides empirical evidence to support my claim that policy reports can serve as tools that equip readers to argue for policy action. To translate these themes into practice, I analyze examples from the cases to propose a practical heuristic for each: report writers should consider how their reports can fill a vacant argumentative niche, offer persuasive citations, and serve as milestone markers in discussions. These heuristics provide a starting point for more deliberate and strategic report composition, to help writers maximize reports' rhetorical utility.

Rhetorical Circulation and Circulation Studies

Rhetorical circulation is the idea that rhetoric and its effects move throughout communities and culture. Circulation studies can be understood as the "study of writing and rhetoric in motion," within the disciplines of rhetoric and composition/writing studies and communication.[382] Notions of circulation have been fruitfully taken up by scholars focused on new materialism and ecological rhetorics to analyze the role of non-human actors in spatio-

[382] Gries, "Iconographic Tracking"; Gries, *Still Life with Rhetoric*.

temporal flows of persuasion.[383] Ideas of circulation, however, have a long history in rhetorical theory, as discussed in depth by Laurie Gries and Collin Gifford Brooke in the introduction to their edited volume, *Circulation, Writing, and Rhetoric*.[384]

Across rhetorical research, attention to circulation "usefully shifts our attention from classical models of rhetorical outcomes (e.g., rhetorical situation, instances of persuasion) to concerns regarding rhetorical transformations across time, space, and media."[385] This shift in attention makes circulation particularly relevant to rhetorical criticism in policy contexts. Rhetorician Robert Asen has observed that "The temporal character of policy debates complicates relations of text and context: what may constitute text at one historical moment changes into context at another."[386] Attention to circulation and rhetoric is well-suited to this inherently fluid policy context. Circulation also helps highlight ideas of speed and reach — with notions such as the viral spread of rhetoric and slow circulation.[387] Overall, ideas of rhetorical circulation challenge conventional notions of the rhetorical situation, by tracing how audiences can redistribute and recompose texts, and how those texts spread and accumulate meaning over time.

So far, some of the most celebrated applications of circulation concepts have focused on circulation as a phenomenon to study, rather than a desired outcome to achieve. For example, Gries' impressively extensive study of the "Obama Hope" political campaign poster chronicles how the image of Barack Obama took on a rhetorical life of its own, far beyond the goals and

[383] e.g., Halm, "Molten Circulation and Rhetoric's Materiality | Enculturation"; McGreavy et al., *Tracing Rhetoric and Material Life*; Edbauer Rice, "Unframing Models of Public Distribution"; Chaput, "Rhetorical Circulation in Late Capitalism"; Eyman, "Digital Rhetoric: Ecologies and Economies of Circulation."
[384] Brooke and Gries, *Circulation, Writing, and Rhetoric*.
[385] Bradshaw, "Slow Circulation," 480.
[386] Asen, "Reflections on the Role of Rhetoric in Public Policy," 135.
[387] Bradshaw, "Slow Circulation."

imagination of its creators.[388] Kathleen Blake Yancey explored tombstones as cultural-rhetorical practices, and observed that technologies like QR-linked websites have made the "circulatory system" of cemeteries larger and more complex.[389] While these kinds of studies do an excellent job of conveying how little control a rhetor has over the circulation of their rhetoric, they say less about how a rhetor might increase their likelihood of circulatory success.

In contrast, John Silvestro's dissertation case study of community advocacy rhetoric is a rare example of a circulation study focused on what writers should do. He explored writing practices at a Cincinnati feminist non-profit and the circulation of their texts post-distribution. Based on his observations of circulation "blockages" and bottom-up/top-down circulation dynamics, Silvestro proposed a set of heuristic questions to encourage writers to compose their texts in ways that enable audiences to circulate ideas in local advocacy discourse.[390] This practice-oriented example, however, is tailored to circulation in local community discourses and based on observations over a one- to three-year timescale. More work on the practical implications of circulation for rhetors is needed in national and international policy settings, and across longer timespans.

Composing for Strategic Recomposition

Building on ideas of rhetorical circulation with an eye to pedagogy, Jim Ridolfo and Dànielle Nicole DeVoss have explored the concept of *composing for strategic recomposition,* whereby rhetors "anticipate and strategize future third-party remixing of their compositions as part of a larger and complex rhetorical strategy across physical and digital spaces."[391] In their

[388] Gries, *Still Life with Rhetoric*.
[389] Yancey, "Tombstones, QR Codes, and the Circulation of Past Present Texts," 80.
[390] Silvestro, "Changing the Conversation," 165–66. The heuristic features four questions with sub-questions, asking how the text aligns with the organization's goals, connects to local conversation, poses potential problems for audience understanding, and offers reasons for audience members to discuss the text with others.
[391] Ridolfo and DeVoss, "Composing for Recomposition."

2009 paper introducing the idea, Ridolfo and DeVoss argue that the field of rhetoric needs a larger lexicon of terms to explain the sort of rhetorical moves made in increasingly complex strategies of delivery in a digital age. They suggest *rhetorical velocity* as one such term, to connote a conscious rhetorical concern for distance, travel, speed, and time, pertaining specifically to theorizing instances of strategic appropriation by a third party. Concepts of recomposition and velocity were further explored by Ridolfo, David Sheridan and Anthony Michel in a book-length treatment theorizing multimodal public rhetoric.[392]

The notion of composing for recomposition advances our understanding of grey literature policy reports in several ways. It surfaces notions of rhetorical remix and "building blocks," specifically in how writers can compose texts with the "express, deliberate purpose of providing materials for future potential acts of appropriation and recomposition by others"[393] Ridolfo and DeVoss suggest recomposition can be understood as positive, neutral, or negative in relation to the original rhetorical aims of the composer. The goal is to make writing choices that increase the likelihood of success in terms of "positive appropriation" and decrease the likelihood of harm in terms of "negative appropriation." These ideas have implications for rhetorical pedagogy in the writing classroom — including that students should develop skills to look beyond the moment of rhetorical delivery and consider multimodal public rhetoric.[394] A key contribution of this work is highlighting ways in which classroom writing assignments should change to better reflect real-world realities of rhetorical composition.

While useful for teachers and students to update activities in writing classrooms, the implications of these theoretical concepts are less clear for practitioners of science

[392] Sheridan, Ridolfo, and Michel, *The Available Means of Persuasion*.
[393] Ridolfo and DeVoss, "Composing for Recomposition."
[394] Sheridan, Ridolfo, and Michel, *The Available Means of Persuasion*, 170.

communication. For example, Ridolfo and DeVoss observe that boilerplate text in a press release offers a rhetorical building block for use in later compositions. This observation, however, does not guide practitioners on how they might craft such a building block in ways that better serve subsequent rhetors. Additionally, many of the digital communication changes (e.g., social media, self-publishing, hyperlinking, combining multimedia video, images and text) that motivated the original theoretical work have become table stakes for any public rhetorician. By paying closer attention to how practitioners compose texts in the real world, and then tracing how their texts are (or are not) recomposed over time, I can advance these ideas in practical settings.

Extended Rhetorical Situation and Expanded Sense of Delivery

Concepts of circulation and recomposition both engage with the rhetorical canon of *delivery* and challenge traditional notions of an individual rhetor addressing a particular audience in a momentary rhetorical situation.[395] Focused on policy change, Carolyn Rude has championed the concept of an *extended rhetorical situation* in which persuasion unfolds over multiple acts of rhetorical delivery.[396] Rude drew on suggestions by Danette Paul, Davida Charney, and Aimee Kendall to look beyond the moment of the text via rhetorical reception studies.[397] Based on her case studies of reports for environmental policy, Rude observed that substantial social change results from repeated — rather than single — rhetorical acts. She thus defined rhetorical delivery in an expanded sense as "an active address to a complex audience that does not reside in one place at one time."[398] Rude argued that a comprehensively defined rhetorical situation and

[395] The term "rhetorical situation" was influentially defined by Lloyd Bitzer as an event comprised by an exigency, audience, and constraints. Bitzer, "The Rhetorical Situation." However, the sense of a context-dependent rhetorical moment can be traced back to Aristotle's' definition of rhetoric as the faculty of observing the available means of persuasion in any particular situation.
[396] Rude, "Toward an Expanded Concept of Rhetorical Delivery."
[397] Paul, Charney, and Kendall, "Moving beyond the Moment."
[398] Rude, "Toward an Expanded Concept of Rhetorical Delivery," 283.

invigorated concept of delivery can offer explanatory power to better understand the rhetoric of civic engagement.

These concepts help us see reports as tools for policy change and make sense of their rhetorical role in public discourse. For example, Rude's case study of environmental reports traces how one report can provide a seed for future reports and serve as a tool that equips activists to better lobby legislators for policy change. Rude's essay also suggests initial ideas to incorporate in classroom instruction for prospective report-writers, including considering integrity and civic engagement as part of delivery, appreciating that policy change is slow, and having a vision for a text beyond its publication.[399] These observations provide a starting place to develop more specific, actionable guidance and analyze how these dynamics hold across other policy areas.

Future-Use Themes and Heuristics

Textual-intertextual analysis of the case studies I have selected for this dissertation uncovers at least three ways in which the reports equipped readers with rhetorical resources for use in subsequent arguments. These three ways (i.e., themes) of future use can be distilled into rhetorical heuristics.[400] In rhetoric, heuristics are systematic sets of questions or lines of inquiry that help guide creative processes.[401] Rhetorician Janice Lauer describes heuristic procedures as a "series of questions, operations, and perspectives used to guide inquiry. Neither algorithmic (rule governed) or completely aleatory (random), they prompt investigators to take multiple perspectives on the questions they are pursuing, to break out of conceptual ruts, and to forage

[399] Rude, "Toward an Expanded Concept of Rhetorical Delivery."
[400] In behavioral economics and psychology, the word heuristics is used to mean mental shortcuts. Research from psychologists Daniel Kahneman and Amos Tversky, for example, has highlighted numerous heuristics and biases in human cognition. In this chapter, I use the term heuristic in the rhetorical sense.
[401] Rowan and Pyle, "Heuristics for Communicating Science, Risk, and Crisis: Encouraging Guided Inquiry in Challenging Rhetorical Situations — the CAUSE Model of Strategic Crisis Communication."

new associations in order to trigger possible new understanding."[402] Heuristics offer an approach to rhetorical invention that is more efficient than trial and error, but more flexible than formal deduction or formulaic steps. Heuristics are intended to reveal new possibilities and help rhetors choose among options. Rhetorical critic Barry Brummett has argued that all rhetorical theory should be viewed as a heuristic device that serves a primary pedagogical purpose.[403] While heuristics are often derived from experts' strategies, they can be taught, learned, and practiced by any writer.[404]

In what follows, I describe and analyze examples from the cases that illustrate three ways the reports served subsequent rhetors. I then propose practical heuristics to help translate those descriptive observations and theoretical analyses into more actionable insights. Based on the case examples and theories of circulation, recomposition, and extended rhetorical situations, I argue that report writers should seize opportunities to fill a vacant niche, leverage resource-source congruence, and construct reports to serve as milestone markers. These heuristics are not prescriptive guarantees but rather tools to help writers recognize opportunities and strategically enhance the rhetorical potential of their policy reports.

Notice and Fill a Vacant Niche

One way the reports aided others' arguments was by offering rhetorical resources that were previously unavailable. This observation and its heuristic corollary — i.e., to notice and fill a vacant niche via a policy report — play with an ecosystem metaphor. Imagine policy discourse on a given topic as an ecosystem, featuring various species, resources, and adaptations that are naturally selected to bring these into alignment. This ecosystem can have vacant niches, defined

[402] Lauer, *Invention in Rhetoric and Composition*, 8.
[403] Brummett, "Rhetorical Theory as Heuristic and Moral."
[404] Lauer, *Invention in Rhetoric and Composition*.

as roles available yet unoccupied by species, with unused but potentially usable resources.[405] If writers of a report can notice and capitalize on these vacant niches in their *policy argumentation* ecosystem, I contend that they can increase the uptake and utility of their report while helping to optimize the ecosystem's functioning overall.

This function is best illustrated with an extended example from the O'Neill report. I will show how the O'Neill report creators noticed an opportunity (i.e., a vacant niche) for global estimates quantifying AMR. In seizing that opportunity to produce and publish such estimates in their report and filling that niche, the report creators performed an important service for subsequent AMR rhetors. In addition to persuading and informing readers, the estimates provided important — but previously missing — rhetorical resources for the report's reader-advocates to persuade *others* about the need for AMR policy action.

Before the O'Neill report, there were no well-known, global estimates of current and future AMR deaths or of the economic impacts from AMR.[406] Experts in AMR policy observed that "scarce data regarding the magnitude of the problem has been considered one of the biggest barriers for national champions to convince policy makers."[407] When Dame Sally Davies was the UK Chief Medical Officer and was starting to focus on issues of AMR policy, she considered the role of economic estimates, explaining: "I'd looked at how climate change came to people's attention, and I realized that Nick Stern looked at the economic impact and that made a big [impact and] brought in the politicians."[408] Davies considered the impact and uses of the Stern climate report in UK policymaking, and recognized a need for something similar in AMR — in

[405] Lekevičius, "Vacant Niches in Nature, Ecology, and Evolutionary Theory: A Mini-Review"; Gibson-Reinemer, "A Vacant Niche"; Sales, Hayward, and Loyola, "What Do You Mean by 'Niche'?"
[406] Laxminarayan et al., "Antibiotic Resistance—the Need for Global Solutions," 31.
[407] Cars et al., "Resetting the Agenda for Antibiotic Resistance through a Health Systems Perspective," e1023.
[408] Lathbridge, *What Do the Challenges of AMR Look like Globally?*

other words, she saw a vacant niche for an independent review with economic estimates, and successfully encouraged the prime minister to commission O'Neill report.[409]

From the outset, the O'Neill team wanted their report to be useful. At the time, O'Neill emphasized his motivation for utility, "I wouldn't have done this if I thought it would be just a big piece of paper that sat on a shelf and gathered dust."[410] Reflecting on the team's approach seven years later, he reiterated the same motivation: "I thought, well how many of these reviews can one do until you end up doing one that just gathers dust? I wanted this one to be used — that really influenced the approach we took."[411] As part of their overall goal to produce a useful report, the team saw generating and publishing estimates of AMR's global impact as a critical contribution.

The O'Neill report's estimates were published in its first 2014 interim report. Their approach was to commission separate research reports from consultancies KPMG and RAND, then to synthesize a single set of global estimates and projections: 700,000 current annual deaths from AMR, a risk for AMR to cause 10 million deaths per year by 2050 if no action is taken, and a potential cost of $100 trillion USD in terms of lost global production between 2016 and 2050.[412] The O'Neill report's team lead, Hala Audi, noted that despite limited data and methodological challenges, the team made the choice to publish estimates and forecasts of AMR deaths and economic costs: "we decided to just go with it because we needed a base from which to start." With the estimates and modelling, they aimed to offer readers something that would "be useful as a tool when you're doing policymaking."[413] From the outset, the O'Neill report team

[409] Baekkeskov, "Policy Entrepreneurship and Problem Brokering in the Global Governance of AMR," 196.
[410] Quoted in McKenna, "How To Prevent Millions of Deaths from Failing Antibiotics."
[411] Jim O'Neill, interview with the author, Sept. 6, 2023.
[412] O'Neill, "Antimicrobial Resistance: Tackling a Crisis for the Health and Wealth of Nations."
[413] Hala Audi, interview with the author, Oct. 17, 2023.

envisioned the estimates as serving an important function for subsequent policy discourse on AMR.

In the final report, the estimates are expertly presented to empower use of the numbers. For example, in the report's forward, O'Neill writes:

> As is now quite well known, we suggested that without policies to stop the worrying spread of AMR, today's already large 700,000 deaths every year would become an extremely disturbing 10 million every year, more people than currently die from cancer. Indeed, even at the current rates, it is fair to assume that over one million people will have died from AMR since I started this Review in the summer of 2014. This is truly shocking. As well as these tragic human costs, AMR also has a very real economic cost, which will continue to grow if resistance is not tackled. The cost in terms of lost global production between now and 2050 would be an enormous 100 trillion USD if we do not take action.[414]

Consider the rhetorical choices he made in this passage. He bolsters the validity of the numbers he reports by pointing out that the estimates published in 2014 have already become well known. He emphasizes the significance of these numbers with added commentary on their disturbing, shocking, and tragic nature, and a contextualizing comparison to cancer deaths. The numbers are then amplified when they are repeated and explained in various permutations throughout the report, including in the executive summary, full-page graphics, introduction, and recommended interventions. In each iteration, the authors contextualize the numbers and what they can represent, such as in the report's concluding remarks:

> Although the scenario where we do not take action is truly frightening, with over 10 million people dying every year by 2050 and a cumulative hit to the world economy of 100 trillion USD, it is sometimes hard to comprehend such large numbers. But these are not just large, forecasted numbers; they represent the future for many individuals - all of us. Indeed, at least 700,000 people die every year already from drug-resistant infections. AMR is sometimes compared to a slow-motion car crash: sadly, it is one that has already started. …. As shocking as these numbers are, it is well within our power to change this situation, and it makes complete economic sense, as well as being a moral necessity.[415]

[414] O'Neill, "Tackling Drug-Resistant Infections Globally: Final Report and Recommendations," 1.
[415] O'Neill, 1.

By publishing and framing these estimates, the report provided new rhetorical resources for readers to bolster their own, subsequent arguments about AMR and AMR policy. By filling a vacant niche with new, global numbers, and demonstrating how to amplify the significance of those numbers, the report's main rhetorical purpose — policy awareness and action — is set out to be amplified by others across diverse media, academia, advocacy, and political settings, an end that is realized throughout the ten years since the report's publication.

The estimates are often used by others to establish the size, urgency and importance of AMR as an issue. In many cases, rhetors promoting AMR action cite the O'Neill report as the source of the numbers. For example, a 2019 news article uses the estimate as context in a story about new antibiotic business incentives, writing that "Antibiotic resistance poses a substantial threat to modern medicine and is predicted to kill 10 million people every year by 2050, according to the O'Neill report — a 2016 review, commissioned by the government, which assessed the potential impact of AMR."[416] Some rhetors cite the O'Neill report via hyperlink, like a 2022 op-ed that notes "The annual death toll from antimicrobial resistance could reach 10 million by 2050 — more people than currently die from cancer."[417] O'Neill report estimates are used in hundreds (possibly thousands) of peer-reviewed academic articles on AMR, most frequently appearing in introductory sections to establish the issue. The report is typically cited as justification for why AMR is an important issue to study (in whatever way that follows), with references such as, "by the year 2050, antimicrobial-resistant pathogens are projected to kill 10 million people each year" and "AMR poses significant population health risks, with annual deaths estimated to be around 700,000 globally."[418] These statements are common practice when

[416] Busby, "Pharma Firms to Be Incentivised to Develop New Superbug Drugs."
[417] Roach, "FDA and USDA Need to Get on Board with the CDC about Reducing Antibiotic Use in Raising Animals for Food."
[418] Ferrisse et al., "Efficacy of Antimicrobial Photodynamic Therapy Mediated by Photosensitizers Conjugated with Inorganic Nanoparticles," 1; Ruckert et al., "Governing Antimicrobial Resistance," 516.

introducing a policy issue, but prior to the O'Neill report, there were no such global estimates for rhetors to use.

In policy settings, there are also countless examples where rhetors cite the estimates to help make their case about AMR. For example, UK Secretary of State for Health and Social Care Matt Hancock justified his priorities for the UK's 2021 G7 presidency using and building on the estimates: "Lord O'Neill's report on the risks of AMR paints a stark picture. It predicts that if we do nothing, AMR will lead to 10 million deaths by 2050, at a cumulative financial cost to the global economy of 100 trillion dollars. Not only that, diseases that we can treat now could become untreatable in the future and modern medicine as we know it could cease to exist."[419] This last claim is paraphrased from the O'Neill report, which states that antibiotics "underpin modern medicine as we know it," so that if they lose their effectiveness, standard procedures such as caesarian sections and joint replacements will no longer be possible.[420] While political rhetors borrow much directly from the report, many add their own rhetorical flourishes, such as when Member of Parliament (MP) Jim Shannon cited the estimates in a debate on universal healthcare:

> The O'Neill review on AMR sets out the global threat by highlighting that drug-resistant infections already kill hundreds of thousands of people a year globally. By 2050, it could be as many as 10 million—one person every three seconds. If we needed a reminder of the importance of the issue, that would be the figure. I am not sure if anybody in the Chamber will be around in 2050—I certainly will not be—but those who are could well face one of the debilitating diseases that we need to research now.[421]

The number of people dying each second is drawn from the O'Neill report.[422] But the appeal to consider future generations who will be alive in 2050 is added by Shannon. When the report

[419] Hancock, "Reinvigorating Our System for International Health."
[420] O'Neill, "Tackling Drug-Resistant Infections Globally: Final Report and Recommendations," 4.
[421] "Universal Health Coverage - Hansard - UK Parliament."
[422] O'Neill, "Tackling Drug-Resistant Infections Globally: Final Report and Recommendations," 12.

launched, MP Kevin Hollinrake wrote an op-ed, where he amplified the report's messages and used the estimates to offer his own persuasive comparison, with the title, "Antibiotic resistance - the new Black Death?" The piece opens with prolepsis, anticipating the skepticism of readers. "I know what you might be thinking 'typical politician, grabbing a sensational headline to terrify the public.' But the headline reflects the devastating conclusions of the Review on Antimicrobial Resistance (AMR), completed in May 2016." Hollinrake then repeated the report's mortality estimates to call for action, because, "If the bacteria that cause infections are resistant to antibiotics, quite simply, people die."[423] Hollinrake used the estimates in a similar way as the O'Neill report (including noting that the estimated figures could be lower or higher), but remixed them in his own rhetorical approach, and amplified the appeal for AMR action to a larger lay audience than the O'Neill report could have reached alone. Hollinrake was previously aware of AMR thanks to the advocacy of a non-profit organization in his constituency — the O'Neill report offered him tools to advocate for a cause he already cared about.[424]

Interviews with report readers working in policy settings underscored how the O'Neill report's estimates were new tools for them to use to advocate for action with other policymakers and politicians. For example, Samuel Kariuki, a director with the Drugs for Neglected Diseases initiative, former Acting Director General at the Kenya Medical Research Institute, and a long-time AMR advocate, emphasized how the estimates galvanized AMR attention in Kenya, "This was the very first time that a business case was put forward by a report, putting dollars against AMR and putting lives against AMR. It may have been pure speculation, but they woke people up…. So to me, that decision was crucial, putting some adrenaline in people so that they act. And I think that has moved the field or accelerated action in the field more than would have happened

[423] Hollinrake, "Antibiotic Resistance - the New Black Death?"
[424] Kevin Hollinrake, interview with the author, Jan. 29, 2024.

if we didn't have the report to use… I think most likely; a lot of people would not have taken things as seriously as they take them now if we couldn't show them the figures then."[425] Kariuki experienced the report's contribution — its filling of the vacant niche — as offering him and others an important resource to accelerate policy action on AMR.

This handful of examples represents hundreds more where media, academics, and AMR policy advocates cited the O'Neill report's estimates as an important building block of their own contributions to policy discourse about AMR.

In this case, however, the estimates also took on a life of their own, circulating independently in AMR discourse. Many news articles and press releases feature un-attributed lines such as, "Experts warn that unless action is taken drug-resistant infections will kill more people than cancer, taking 10 million lives a year by 2050."[426] Commentaries use the estimates to paint a picture, like a 2024 piece in *The Conversation,* writing "Imagine the world in 2050: Without preventative action, it is estimated that by 2050 antimicrobial resistance would lead to 10 million people dying every year and cost the global economy US$100 trillion."[427] International organizations including the World Health Organization (WHO) argue the urgency of AMR using the O'Neill estimates, with lines such as: "AMR is predicted to cost the global economy an estimated cost of USD$100 trillion between 2014 and 2050 and we have no time to waste to tap into the potential of scaled up vaccination efforts to prevent the spread of AMR.[428] These un-attributed uses of the numbers have had remarkable staying power in AMR discourse, a sign of their persistent utility for rhetors. In written statements submitted to inform the 2024 United Nations (UN) General Assembly High-Level Meeting on AMR, many of the "specially

[425] Samuel Kariuki, interview with the author, July 15, 2024.
[426] Asthana and Boseley, "UK Doctors Told to Halve Inappropriate Antibiotic Prescriptions by 2020."
[427] Morgan, "Climate Change Is Fuelling the Rise of Superbugs. What Can We Do to Save Ourselves?"
[428] "Vaccines Could Avert Half a Million Deaths Associated with Anti-Microbial Resistance a Year."

accredited stakeholders" opted to use the figures as part of their arguments for UN action. For example, a Portuguese NGO representative argued, "AMR is a significant and growing global health threat that transcends borders, impacting human, animal, plant, and environmental health. It is estimated that by 2050, AMR could cause 10 million deaths annually and a potential loss of $100 trillion to the global economy."[429] UK politicians advocating for AMR action continue to use the numbers in their own arguments. For instance, MP Virendra Sharma noted, "If no action is taken, it is estimated that more deaths will be attributed to AMR by 2050 than current deaths from cancer."[430] MP Will Quince added them to his own rhetorical question, "What if I told the House that 10 million people—I repeat that figure; 10 million—are predicted to die globally each year by 2050 because of this issue if urgent measures are not taken?"[431] The O'Neill report contributed figures that continue to serve as tools to help rhetors contextualize the magnitude and urgency of AMR, even when those sources fail to cite the O'Neill report as the original source of those figures.[432]

As the estimates continued to circulate and be recomposed, many rhetors also cite secondary sources when they use the estimates. For example, a news article attributes the numbers to the IACG report, writing "The UN reports worst-case projections of 10 million deaths per year by 2050, a cost to the global economy of $100 trillion, and millions of people forced into extreme poverty."[433] While true — the IACG report did use and cite the O'Neill estimates — this is an example of how the composed estimates are strategically recomposed for

[429] "Written Statements – Specially Accredited Stakeholders," 12.
[430] Hansard, "Antimicrobial Resistance," 726.
[431] "Antimicrobial Resistance," April 17, 2024.
[432] As the O'Neill estimates circulate over time, they take on more factual authority as more people repeat the numbers — which were always just a guess. Science and technology studies scholars Latour and Woolgar distinguish between different types of epistemic statements, from level one conjecture to level five as general, taken-for-granted facts that do not require citation. *Laboratory Life: The Construction of Scientific Facts.*
[433] Baekkeskov and Rubin, "Policy Termination Made Easy?"

various rhetorical effects delivered over an extended rhetorical situation. Similarly, in opening statements testifying before in a House Energy and Commerce Subcommittee hearing, director of Health Care US Government Accountability Office Mary Denigan McCauley attributed the O'Neill estimate to the WHO: "According to the WHO, if nothing changes by 2050, 10 million people are expected to die from drug resistant diseases infections every year."[434] Since the WHO *has* used the estimate for various arguments over time, they become a viable source for the numbers, perpetuating a chain of strategic recomposition that furthers the O'Neill report's aim of AMR awareness and policy action among new audiences at future timepoints (in this example, to members of Congress on a 2023 US House subcommittee). In the course of the estimates' re-circulation, they can be flexibly re-attributed to those who amplified the report initially, such as a news story reporting on a UK government debate that attributes the numbers to an MP: "Closing the debate, Ms Blackwood said AMR had the potential, globally, to lead to 10 million deaths by 2050, with a loss to global productivity of £100 trillion."[435]

The fact that the estimates were used with proper citation, without citation, and with improper citation suggests they offered rhetors something separate from the credibility of their source alone. They became a new rhetorical resource for rhetors to use. An O'Neill report team member and one of the creators of the original estimates, Anthony McDonnell reflected on the subsequent impact of including the numbers in the report: "in terms of an advocacy and policy tool, it was incredibly, incredibly useful. …there was a huge political value in this, even if the academic value is contested."[436] Indeed, epidemiology and microbiology researchers criticized the estimates for being based on insufficient data, problematic assumptions, and simple

[434] "House Energy and Commerce Subcommittee on Oversight and Investigations Holds Hearing on Antimicrobial Resistance."
[435] The O'Neill estimate was in US dollars, but in this debate, Blackwood misquoted it as in the British pound sterling. "O'Neill Review (Volume 622)," Column 267WH; Quoted in Driver, "AMR Debate."
[436] Anthony McDonnell, interview with the author, Sept. 25, 2023.

mathematical modeling methods. Critics also argued that the numbers should have been subjected to expert scrutiny via peer-review and that the significant scientific uncertainties should have be emphasized with confidence intervals.[437]

However, seeing the estimates' argumentative importance and political value directly inspired other groups to gather better data and create more rigorous estimates — first the World Bank, and eventually the Global Research on Antimicrobial Resistance (GRAM) project. In January 2022, eight years after the O'Neill report estimates were first published, the GRAM study produced an updated estimate of 4.95 million deaths *associated* with bacterial AMR in 2019, including 1.27 million deaths *directly attributable* to AMR — almost double the O'Neill report's guess of 700,000 deaths caused by AMR.[438] AMR advocates seem willing and able to adopt new numbers for their strategic recomposition purposes, emphasizing with their new, higher numbers that the O'Neill report's estimates were actually too conservative. This further amplifies the significance of the claim. For example, coverage of the new study highlights that the new estimate of 1.27 million deaths in 2019 are "verging on double the at least 700,000 annual deaths estimated by the landmark O'Neill report in 2016" and extrapolates to the future, noting that, "with AMR confirmed to have played a role in almost 5 million deaths in 2019, we are already frighteningly close to the 10 million annual deaths the O'Neill report predicted by 2050."[439] Those advocating for AMR use new, higher numbers when they become available. In his 2024 opening remarks on AMR, for example, the UN President of the General Assembly

[437] e.g., de Kraker, Stewardson, and Harbarth, "Will 10 Million People Die a Year Due to Antimicrobial Resistance by 2050?"; Abat et al., "Evaluating the Clinical Burden and Mortality Attributable to Antibiotic Resistance"; Cars et al., "Resetting the Agenda for Antibiotic Resistance through a Health Systems Perspective"; Limmathurotsakul et al., "Improving the Estimation of the Global Burden of Antimicrobial Resistant Infections."
[438] Murray et al., "Global Burden of Bacterial Antimicrobial Resistance in 2019"; The O'Neill estimates are for the direct cause of death, and the O'Neill report does not quantify attributed deaths. However, the report does note "we did not even consider the secondary effects of antibiotics losing their effectiveness, such as the risks in carrying out caesarean sections, hip replacements, or gut surgery." "Tackling Drug-Resistant Infections Globally: Final Report and Recommendations," 1.
[439] The first set of numbers are deaths directly attributable to AMR, the second are deaths where AMR was involved as an indirect cause of death. Jinks, "Shockingly High Impact of AMR."

Dennis Francis used the updated, more rigorous GRAM estimate, mixed in with the O'Neill forecast: "As we gather here today, a silent pandemic — [AMR] — accounts for nearly five million deaths annually. Left unaddressed, it is estimated that AMR could cause up to 10 million deaths per year by 2050."[440] In fall 2024, the GRAM project offered an updated forecast looking ahead to worst case scenarios in 2050, predicting AMR could lead directly to more than 39 million deaths and be associated with a broader 169 million deaths between 2024 and 2049. More than 10 years after the O'Neill estimates filled a vacant niche in the AMR argument ecosystem, they are being dislodged by stronger, "better-adapted" rhetorical resources. But even the new numbers evoke the old ones, continuing to project out to the 2050 date that O'Neill's report selected. Meeting an argumentative need, the O'Neill report estimates helped thousands of other rhetors position AMR as one of the most pressing threats to health of the 21st century. And when better resources become available to argue with, AMR advocates are happy to pick up the newly sharpened tools.

What made the original O'Neill report's estimates so useful in circulation and recomposition was that they were filling a vacant niche. O'Neill captured this notion in an interview about the report's launch: "On the precise estimates of the size and economic impact of drug-resistant infections by 2050, he says: 'Would I spend a lot betting on the projections? I'm not sure. But nobody had ever attempted to make any calculations, and meanwhile resistance is rising faster than we thought.'"[441] Filling the vacant niche for estimates — admittedly with imperfect guesses — introduced valuable argumentative resources into the ecosystem. The O'Neill estimate example highlights how the report was able to further its goals of AMR

[440] Francis, "PGA Remarks at the Opening Segment of the Multi-Stakeholder Hearing of the High-Level Meeting on Antimicrobial Resistance | General Assembly of the United Nations."
[441] Leatherby, "Drug-Resistant Infections Threaten Economies; Antibiotics Need for New Treatments Is Urgent."

awareness and action — but mediated through the arguments of other rhetors over the subsequent decade.

Application

Drawing on rhetorical theories of circulation, recomposition, and delivery helps to explain this observation of how the O'Neill report equipped its readers to make their own arguments. Theories of circulation offer the notion of noticing and removing "constraints and blockages" to the movement of an argument through different discourse communities. Silvestro has observed that writers use multiple strategies to increase the circulation of texts by preempting potential blockages and motivating others to share with their own discourse communities.[442] The O'Neill example suggests that one such blockage might be a noticeable "lack" of argumentative resources (i.e., a vacant niche), such as not having reasonable estimates about the scale of the problem. Filling that gap is one way to potentially increase the healthy circulation of arguments — in this case, arguments for AMR action. Answering Rude's call to expand our sense of delivery, this case study highlights that the report's rhetorical situation stretched almost ten years beyond the O'Neill report's 2016 publication.[443] The estimate continued to be "delivered" by myriad other rhetors across mediums and time. Considering how writers can compose for strategic recomposition, the O'Neill report's death estimates provides an excellent illustration of Ridolfo and DeVoss's notion of building blocks by demonstrating how a report can provide modular rhetorical resources that help others compose their own arguments.[444] The O'Neill team recognized a need for specific building blocks for policy discourse on AMR, and providing such

[442] "Changing the Conversation."
[443] Rude, "Toward an Expanded Concept of Rhetorical Delivery."
[444] "Composing for Recomposition."

materials — namely, the estimates — enabled others to craft their own arguments that further the original text's rhetorical aims.

My use of this example aims to do two things in connection to these existing theories. First, it supports my claim that one critical purpose of policy reports is to equip their (already-aware, already-persuaded) readers with rhetorical resources for future use. Second, it helps me translate the theories and my observations about the case into a heuristic lesson that could guide practice.

The takeaway I want to emphasize from this example is not about the potential value of quantifying global issues or about the rhetorical power and limitations of arguing with numbers.[445] This heuristic is about encouraging report writers to respond to a vacant niche. In the O'Neill example, the lack of numbers represented an important but vacant niche in AMR's argumentative ecosystem before 2016. Reflecting on efforts to generate updated estimates years later, O'Neill said he is unconvinced about what such updated estimates can achieve in terms of global action and awareness: "Really, what's the point? All you're going to do is come up with a bigger number. And, is there the appetite in the global population to be hearing all these numbers about how we're all going to be dying from everything all the time? I'm not sure…I don't know, especially because of the lingering fallout from COVID."[446] O'Neill is keenly aware that the policy discourse has shifted post-COVID, and there may be less appetite — less of a vacant niche — for such estimates in 2024 than in 2014-2016.

[445] Others have explored the persuasive benefits and drawbacks of numbers and statistics in argumentation, including Wolfe, "Rhetorical Numbers"; Wynn and Reyes, *Arguing with Numbers*; Yarwood and Doherty, "Communications Experts – This Massive Global Health Problem Needs Your Help."
[446] Jim O'Neill, interview with the author, Sept. 6, 2023.

The other cases offer opportunities to interrogate if and how this heuristic would apply, retrospectively, for other policy reports. For both the CSE and IACG case studies, the heuristic to notice and fill a vacant niche illuminates the reports' rhetorical successes and possibilities.

For the CSE report, its authors successfully noticed two vacant niches that overlapped: the need for perspectives on AMR from LMIC countries, and a need for AMR arguments to focus more on environmental and animal aspects. At a high level, the entire CSE report was an effort to fill both of these vacant niches. Doing so offered rhetorical resources in the form of policy recommendations that were argued about and incorporated into India's National Action Plan (NAP) on AMR and that were subsequently used to argue for development and prioritization of NAPs in other countries such as Zimbabwe and Zambia. The CSE report provided a new resource its authoring organization and readers could use to draw attention to the environmental elements of AMR as a policy issue. Reflecting on the landscape at the time, CSE report team member Rajeshwari Sinha noted, "[The UN Environment Programme] is on board today, but at that point in time, CSE was one of the first organizations who said, where is the environment representation in AMR discussions?"[447] Filling this niche with the report at the time proved a successful strategy to establish CSE in the space and likely contributed rhetorical resources for others to use in their national planning.

When the IACG was launched, there was a vacant niche for UN-wide shared commitments and consensus on AMR policy. The WHO had been doing work on AMR for decades, and other UN organizations had some AMR initiatives, but the argumentative ecosystem lacked the kind of multi-organization, international consensus documents (i.e. statements, declarations, targets) that had proven important to advance cross-sector public policy

[447] Rajeshwari Sinha, interview with the author, Sept. 21, 2023.

progress in other areas such as HIV/AIDs and non-communicable diseases.[448] Filling this vacant niche offered AMR rhetors a resource to recompose and deliver across an extended rhetorical situation, such as when UCL's Global Governance Institute argued that "a shared global vision and strategy is essential to tackle AMR" and that, "A recently published document by the [IACG] on AMR offers a number of concrete recommendations in this regard."

Leverage Resource-Source Congruence

A second way the reports can empower readers is by serving as a credible and logical source to cite in subsequent rhetorical efforts. This observation suggests a heuristic: report writers should prioritize and emphasize rhetorical resources (e.g., points, arguments, data) that align most strongly with their (or their organization's) *ethos* as a source to increase the likelihood those resources are circulated and cited in the future. The heuristic encourages writers to think backwards from an imagined future use — specifically, to ask: for which points might *your* report provide the best-matched, most compelling citation? When a point and its source are well-matched, policy reports can offer particularly potent rhetorical tools for subsequent rhetors to use.

This second observed function and its related heuristic can be illustrated by an example from the IACG case study. My claim is not that the IACG consciously or perfectly enacted the heuristic to leverage resource-source congruence. Instead, by looking at what did and did not gain traction post-publication, the IACG case reveals how the points in the report that best matched IACG as a source seemed to have been circulated more across an extended rhetorical situation.

[448] Rodi et al., "Political Rationale, Aims, and Outcomes of Health-Related High-Level Meetings and Special Sessions at the UN General Assembly."

The IACG report covers a wide range of AMR policy areas, with recommendations organized under five sections, broadly: country progress, innovation, collaboration, investments, and global governance. Looking at the report's reception and discussion, the IACG fifth section of recommendations on global governance seem to have generated the most persistent post-publication circulation and recomposition in subsequent arguments.

This rhetorical uptake of IACG's global governance recommendations likely resulted from a mix of factors. For instance, the recommendations under global governance may have felt more concrete and feasible than other, more abstract recommendations in the report. However, with an eye to circulation, recomposition and extended delivery, I argue at least *one* important factor was that the report's global governance points were particularly well-matched with IACG as their citable source. AMR has been long-recognized as a global issue requiring multilateral collaboration between countries and coordination among international organizations.[449] The IACG was established after a declaration from the UN — arguably the best-known intergovernmental organization, whose purpose includes achieving international cooperation, and "serving as a centre for coordinating the actions of member states."[450] Its very name (inter-agency coordination group) highlights its role of coordinating among UN specialized agencies, organizations and other bodies that *themselves* exist to facilitate international collaboration between countries. The IACG thus provides a persuasive potential source for arguments about such collaboration.

The IACG report's last section, *Strengthen Accountability and Global Governance,* lists four recommendations for the UN secretary general and member states, to: 1. Strengthen joint action between UN bodies, 2. Establish a Global Leaders Group supported by a joint secretariat

[449] Huttner et al., "Antimicrobial Resistance."
[450] "Chapter I."

(and establish a constituency-based partnership platform as part of this work), 3. Convene an Independent Panel on Evidence for Action Against AMR, and 4. Expedite the development of the global stewardship framework to combat AMR (as called for by the 2016 UN declaration on AMR). Post-publication, however, these recommendations are frequently remixed and summarized as proposing three new global governance entities: a Global Leaders Group, a Panel for Evidence, and a constituency-based "multi-stakeholder" partnership platform.[451] For instance, the WHO presents these as key points to pull out of the IACG report, as do advocates calling for AMR action.[452] (See Figure 3 for example slides.) In these subsequent uses, the fourth recommendation regarding the expedited framework is not listed. The first recommendation to strengthen joint action between UN organizations is implied, but is not explicitly mentioned. The second recommendation for a Global Leaders Group is split into two.

Figure 3. Rhetors summarizing IACG governance recommendations in presentations

In addition to demonstrating that IACG global governance recommendations circulated post-publication, these examples highlight how readers remix points from the report to use for their own rhetorical purposes.

Throughout years of debate and discussion about global AMR governance, citing the IACG report has helped subsequent rhetors by offering justification, rationale, and credibility to

[451] e.g., "Antimicrobial Resistance - Who We Are"; "ReAct Reports from the First AMR Multi-Stakeholder Partnership Platform Plenary Assembly – 2023."
[452] Cars, "Global Governance of AMR - beyond the IACG Recommendations?," 12; WHO, "AMR Multi-Stakeholder Partnership Platform: Creating a Movement for Change through Engaging Multiple Actors and Voices."

their arguments about global governance structures. Advocates for global governance action have repeatedly invoked the IACG report as a supportive voice on their side.

In 2019, the recommended joint secretariat was established permanently, to support cooperation between UN organizations.[453] The secretariat went on to set up the Global Leaders Group later in 2020, and then the Multi-Stakeholder Partnership Platform throughout 2021 and 2022.[454] For both entities, the IACG report provided a reference to rationalize their formation. For example, meeting documents by the UN "Tripartite" organizations — WHO, Food and Agriculture Organization of the UN (FAO) and World Organization for Animal Health (WOAH) — note that the establishment of a Global Leaders Group "is one of the key recommendations of the IACG, which the Tripartite leadership has prioritized."[455] Here, the fact that the Leaders Group was one of the IACG's recommendations helps to justify its prioritization by the FAO, WOAH, and WHO. Once the Leaders Group was established, descriptions of the group continue to cite the IACG as a justifying reason for its existence. For example, the press release announcing the group explained, "The group was created in response to a recommendation from the [IACG]."[456] The Wikipedia entry for the group states that the Leaders Group "was established in November 2020 following the recommendation of the [IACG] to strengthen global political momentum and leadership on AMR."[457] These explanations both cite the IACG and echo the reasons presented in the IACG report. As another example, the Australian Government notes on its AMR webpage that, "[The Global Leaders Group] was recommended by [IACG on AMR], so that its formation would strengthen global political momentum and leadership on

[453] "Implementing the Global Action Plan on Antimicrobial Resistance: First Quadripartite Biennial Report," 101.
[454] "Implementing the Global Action Plan on Antimicrobial Resistance: First Quadripartite Biennial Report," 101.
[455] WOAH was founded as the Office International des Epizooties (OIE) and is occasionally referenced as OIE despite its name change to WOAH in 2003. "Web Annex 2: Establishment of the Global Leaders Group (GLG) on Antimicrobial Resistance (AMR) by the FAO/WHO/OIE Tripartite."
[456] "World Leaders Join Forces to Fight the Accelerating Crisis of Antimicrobial Resistance."
[457] "Global Leaders Group on Antimicrobial Resistance," January 18, 2024.

AMR."[458] The IACG report provided AMR rhetors with arguments they can attribute to a credible source to justify and explain why a particular action was taken – in this example, establishing the Global Leaders Group. Discussions about the Multi-Stakeholder Platform follow the same pattern. Before its establishment, the IACG citation provides arguers with reasons for the platform, enabling advocates to pose and answer rhetorical questions such as, "*Why a new Platform?*....The UN [IACG] recommended establishing a constituency-based partnership platform to develop and implement a shared global vision, narrative and targets."[459] After establishment of the platform, the IACG continues to provide arguers with a source to rationalize its existence, enabling contextualizing statements such as, "The Platform was first proposed by the IACG*"* that help explain where the platform came from.

Of the IACG's recommended global governance bodies, the independent evidence panel had the longest journey to implementation. After years of public argumentation and debate, the political declaration from the 2024 UN High-Level Meeting on AMR included a commitment to establish the independent panel in 2025.[460] Throughout those intervening years, readers of the IACG report used the report as a key citation in their own appeals for the creation of such a panel.

The importance of leveraging resource-source congruence is demonstrated by the fact that the IACG was not the first to suggest an independent panel for AMR modelled off of the Intergovernmental Panel on Climate change. The idea was proposed in a 2014 *Nature* commentary, by epidemiology professor Mark Woolhouse and then-director of Wellcome Trust, Jeremy Farrar. They called "for the creation of an organization similar to the Intergovernmental

[458] "Global Leaders Group on Antimicrobial Resistance," December 8, 2021.
[459] "AMR Multi-Stakeholder Partnership Platform - Creating a Movement for Change through Engaging Multiple Actors and Voices."
[460] "Public Discussion - Draft Terms of Reference of the Independent Panel on Evidence for Action Against Antimicrobial Resistance."

Panel on Climate Change (IPCC) to marshal evidence and catalyse policy across governments and stakeholders" in AMR and reiterated the idea in a subsequent academic article.[461] Their suggestion was cited and discussed in several articles by other academics.[462] But it was the IACG report coming out of the UN that got cited in the policy space as the source for this recommendation.

Although it was not the first to propose the idea, the IACG provided an excellent citation to bolster the arguments of those advocating for a panel after its publication. These subsequent rhetors leveraged the IACG as a source to amplify their points. For example, commentary from a Canadian AMR Policy Accelerator based at York University opened its arguments for a panel with a link to the report, noting that "In 2019, the UN's [IACG] identified three bodies needed to support global efforts to address AMR."[463] Pointing out that the independent panel on evidence has yet to be created, the group used the IACG report reference as a springboard for their own arguments for a well-designed scientific panel on AMR.[464] Across policy briefs, media commentaries, and webinars, the Policy Accelerator made their own arguments for why a well-designed panel could play a vital role in global AMR governance, but consistently used the IACG as a foundational citation for the idea.[465] By aligning recommendations with the ethos of the authoring body, policy reports can empower their readers by providing a well-matched, persuasive citation to strengthen readers' subsequent rhetoric about AMR action. Those advocating for an evidence panel referenced the IACG report to build their arguments — which,

[461] Woolhouse and Farrar, "Policy," 556; Woolhouse et al., "Antimicrobial Resistance in Humans, Livestock and the Wider Environment."
[462] e.g., Pearce, Mahony, and Raman, "Science Advice for Global Challenges"; Gluckman and Wilsdon, "From Paradox to Principles."
[463] Poirier, "At the UN, World Leaders Are Negotiating the Biggest Health Issue You've Never Heard of."
[464] "Designing an Independent Panel on Evidence for Action against AMR."
[465] "Designing an Independent Panel on Evidence for Action against AMR"; Poirier, "At the UN, World Leaders Are Negotiating the Biggest Health Issue You've Never Heard of"; *Designing a Scientific Panel on AMR – Lessons from Climate Change Policy*.

over the extended rhetorical situation of 5+ years, ultimately succeeded in persuading UN member states to establish the panel.

Application

By engaging rhetorical theories of circulation, recomposition, and delivery we can better understand how reports featuring strong source-resource alignment benefit reports aiming to influence subsequent rhetors. In its post-publication rhetorical circulation, the IACG report serves as a sort of expert witness testimony, enabling subsequent authors to draw on the *ethos* of its authors via citations and to build their own *ethos* in the process. From the perspective of the report authors, this ongoing referencing represents a kind of expanded delivery of (some of) the report's messages, as described by Rude. While the IACG report's recommendations on global governance were widely circulated and recomposed, not everything from the report proved as useful to cite. From the perspective of subsequent rhetors — those citing the report as part of their appeals —a recommendation regarding the formation of a group, a platform, or a panel served as a valuable rhetorical building block for rhetorical recomposition. In analyzing how policy reports were cited by subsequent users, existing research on citation practices is highly relevant. Research on citation and attribution practices comprises a large body of literature spanning many disciplines, including applied linguistics, information science, and journalism studies. While a detailed review of this literature is beyond the scope of this chapter, together these citation studies highlight the diversity and complexity of citation practices across contexts. For example, applied linguist Ken Hyland has conducted research on the rhetorical purposes of citations in academic writing. Across disciplines, he argues that citation is "central to the social context of persuasion" by enabling an academic writer to accomplish various potential tasks, including "to display an allegiance to a particular community or orientation, create a rhetorical

gap for his or her research, and establish a credible writer *ethos*."[466] Outside of academia, in policy debates, policy reports can help subsequent rhetors display allegiance to a credible source and strengthen their own *ethos* by providing a congruent citation for a given recommendation for action (as the IACG report did in recommending an evidence panel).

Considering how this heuristic could apply in the other two cases, post-publication reception evidence suggests a similar pattern: that the rhetorical resources best aligned with the source of the report were useful citations for subsequent arguers.

The CSE case study has less written reception evidence of citations to explore. The citations that exist, however, suggest alignment between the points cited and the report as their source. For example, a book chapter advocating for civil society involvement in responding to AMR cites the report as a positive example of environmental advocacy in AMR, writing: "[CSE] in Delhi has looked more broadly at how to integrate animal and environmental aspects into the development of National Action Plans on AMR in developing countries."[467] The CSE report provides the chapter authors with a citable example of an environmentally-focused organization advancing policy change on AMR. The CSE offers a congruent source to cite for such environment-related claims, because of its long-standing work and credibility in environmental sustainability. The CSE report is also a good source as a LMIC-based voice, and especially in India. While CSE does not have the same prominence as large, global organizations, it can speak as a credible LMIC source, with environmental expertise, and potentially more latitude to critique the status quo (e.g. exclusion of environmental concerns from AMR policy, lack of focus on LMIC needs). Considering the heuristic to leverage resource-source congruence highlights an opportunity for reports from organizations like CSE. Their reports can offer particularly useful

[466] Hyland, "Academic Attribution," 342.
[467] Anderson, Cecchini, and Mossialos, *Challenges to Tackling Antimicrobial Resistance*, 229.

citations for subsequent arguers who want to critique the status quo and attribute the critique to a congruent source.

In the O'Neill report case study, the heuristic of leveraging resource-source congruence highlights report composition considerations in two main areas. First, it highlights a geographic element of congruence. The O'Neill report is a UK-based source. So, citing the report as a source for national policy recommendations is particularly useful to UK-based rhetors debating national policy. This observation can inform writers' composition choices. Noting who is most likely to use and benefit from their work, they can tailor the report or produce additional products that cater to those likely users. Second, the O'Neill report had strong congruence as a source for its rhetorical resources related to economics. Reflecting on decades of work in the pharmaceutical industry and global policy, AMR advocate Jon Rex observed of the O'Neill report:

> Despite the fact that it's actually seven reports and thousands of person-hours, you end up just quoting a few things out of all that stuff. I'll say you almost sort of refer to it as this magical entity: "The UK AMR review said that …" And even if people haven't read the report, they nod their heads up and down and agree with it, because Lord O'Neill wrote it. But still, the consequences of some of the ideas in it have been profound. Like, the pay or play [idea] drove the creation of the AMR Action fund, which is a billion dollars put up by the pharmaceutical industry.[468]

Given O'Neill's expertise in economics, the report provides a particularly useful citation for those arguing about pharmaceutical payment models and economic policies.

The rhetorical value of source-resource congruence might be best demonstrated by the number of times rhetors strategically cite a secondary source versus the original. As detailed above, many rhetors attribute O'Neill report estimates to secondary sources. For example, citing WHO documents as the source for AMR mortality estimates offers arguers a better-known global health source to emphasize their points (even though those sources got the figures from

[468] John Rex, interview with the author, Feb. 6, 2024.

the O'Neill report, and correctly cited it as their source). Subsequent citations might even enhance the persuasive usefulness of a report, by serving as an endorsement. While these citation practices are not within report authors control, they do suggest the value of providing a strong source-subject congruence to increase the chances of being cited.

This heuristic encourages writers to imagine a future scenario. To enact this heuristic, report writers can envision a reader who will cite something from their report, and to imagine for what point(s) their report could offer a strong citation. While writers cannot control how their reports are cited, they can consider this important future use as part of their writing.

Construct a Milestone Marker

A third way that a report can prepare subsequent rhetors is by serving as a landmark in a navigable narrative of progress. Metaphors of movement through time and space underlie this observation and its related heuristic (i.e., to make your report a milestone marker). Imagining AMR policy discourse as a landscape, a writer can think of their report functioning as a landmark — a milestone marker, recognizable turning point, signpost — to help subsequent rhetors articulate prior progress and navigate a path forward. This heuristic guides the writer to consider how their report can stand for a moment and "place" in AMR's trajectory as a policy issue. Since reports become references for future discourse, they can also serve as a baseline for how an issue was understood and argued at a given moment, a way to look back and measure progress from that point (or, a lack thereof) throughout an extended rhetorical situation.

This third future-focused rhetorical function of policy reports can be illustrated with examples from the CSE case study. The CSE report offered useful guidance and information. But, beyond its specific contents, the report also represented an overarching argument: that LMICs need guidance on how to address environmental and animal aspects of AMR in their

national planning. Using the report as a symbol of this argument has proven valuable in CSE's delivery of its AMR advocacy messages across an extended rhetorical situation. Using the report as a landmark in their accumulated AMR work enables them to build credibility with a narrative of progress and to show that their thinking is advancing to both shape and reflect policy discourse.

Before this case study report, CSE had not ventured into international AMR policy work. CSE had done some initial studies on AMR in India,[469] but report team member Rajeshwari Sinha explained, "This was really our first international foray with AMR policy."[470] The CSE team used various strategies and platforms to disseminate the report, including posting it to their website, issuing a press release, writing op-eds, emailing it to expert contributors (i.e. workshop participants), and presenting it at conferences and other events. Considering initial circulation, reception evidence shows that some groups who received the report in the initial dissemination circulated it to their own audiences via newsletters. For example, the Global Antibiotic Resistance Partnership emailed a newsletter to subscribers featuring a link to CSE's report, writing "The Center for Science and the Environment published an informative and concise guide to incorporating animal and environmental AMR policies into NAPs."[471] Sinha noted that post-publication circulation of the report — both by CSE, and by the report readers — proved vital to increasing the impact of its messages overall: "We had to take our document, circulate our document, explain what we meant by what we wrote, and also enable others to share and use the information."[472]

[469] Johnson and Jadon, "Antibiotic Residues in Honey"; Bhushan, Khurana, and Sinha, "Antibiotic Use and Waste Management in Aquaculture: CSE Recommendations Based on a Case Study from West Bengal"; "Antibiotics in Chicken."
[470] Rajeshwari Sinha, interview with the author, Sept. 21, 2023.
[471] Global Antibiotic Resistance Partnership, "GARPnet News (Newsletter)."
[472] Rajeshwari Sinha, interview with the author, Sept. 21, 2023.

Analyzing longer-term post-publication evidence of report reception and use, CSE has continued to use the 2017 report in its subsequent presentations and reports to help convey their journey, credibility, and thought-leadership in international AMR policy. This seems to be a valuable future use of the report, and exemplifies one function a report can serve for an organization when considering an extended rhetorical situation and expanded sense of delivery. In CSE's presentations and policy conversations, their past reports accrete and provide a more credible foundation from which to argue. With an expanded sense of delivery, the reports equip people at CSE with tools to advance policy discourse. CSE's Director General, Sunita Narain, explained, "I'm very clear that CSE's role has to be one of knowledge-based activism. And for us, therefore, the research we do, the guidance that we put together, all our reports — those build the case for somebody like me to raise points and take things forward in the conversation."[473] While the reports are certainly related to building CSE's *ethos*, Narain's reflections also hint at a directional, symbolic function of the reports for subsequent argumentation. In her work to advocate for AMR policy action, the reports are tools that help her direct discourse about the issue.

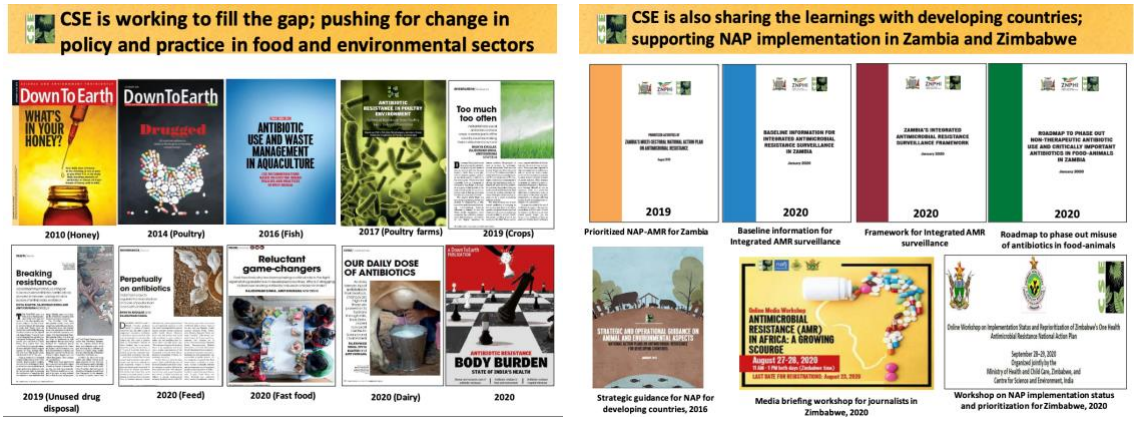
The future function of the report becomes clearer when considering CSE's following public argumentation efforts. The report is frequently presented as one link in a long chain of preceding and subsequent efforts to influence and improve AMR policymaking. CSE recomposes the thumbnail report cover in different iterations, to deliver its arguments on AMR policy in various ways. Most basically, the report as a milestone marker can be used in a straightforward chronology, as one time point in CSE's growing body of work on AMR.[474] (See Figure 4, where the report in question is the first item in the second row.)

[473] Sunita Narain, interview with the author, Nov, 8, 2023.
[474] Sinha, "Double Standards and Approaches for Globalizing Food Campaigns," 4.

Figure 4. Report as part of CSE's timeline of AMR work

In another presentation, CSE thematically separates its research studies from its reports focused on LMIC policy development across two slides, both arranged chronologically.[475] (See Figure 5, where the report in question is in the left-hand bottom corner of the second slide.)

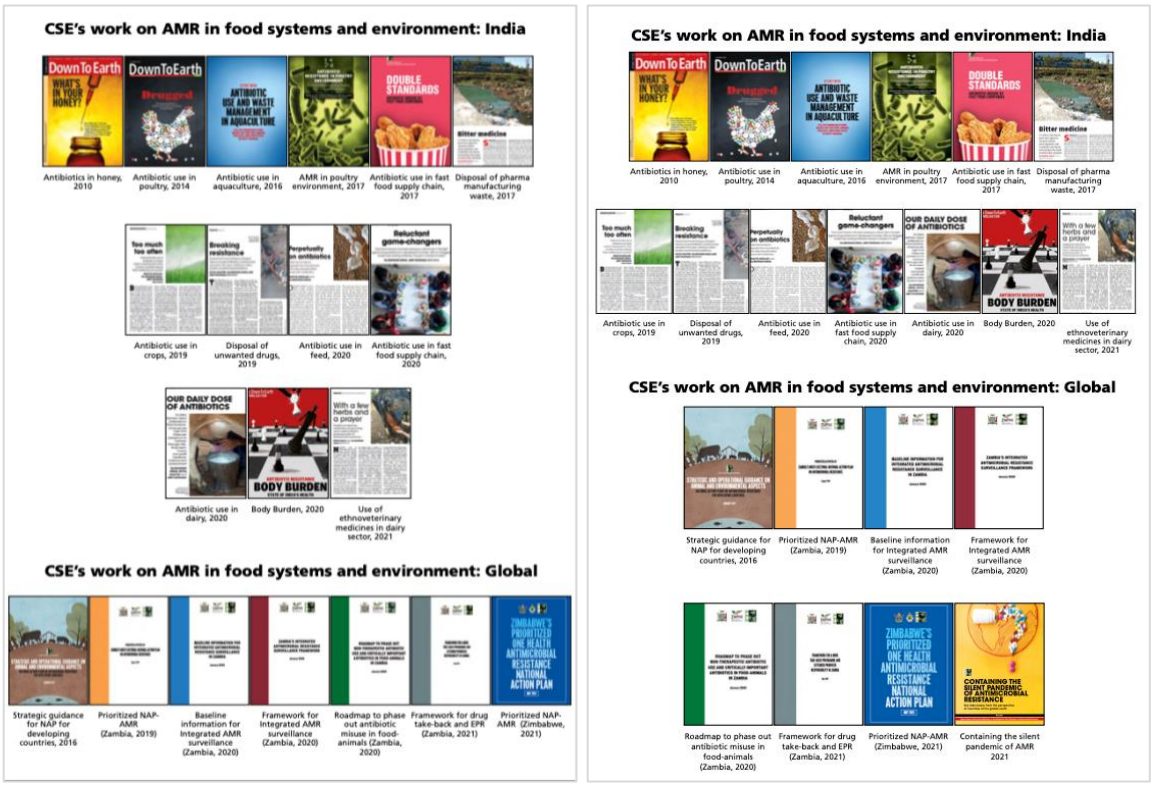
Figure 5. Report use in timelines for different areas of work



[475] Narain, "One Health Approach to Fight AMR," 6–7.

The report cover thumbnail also appears in *subsequent* reports to mark a starting point, visually launching CSE's global work on AMR in food systems and the environment.[476] (See Figure 6.)

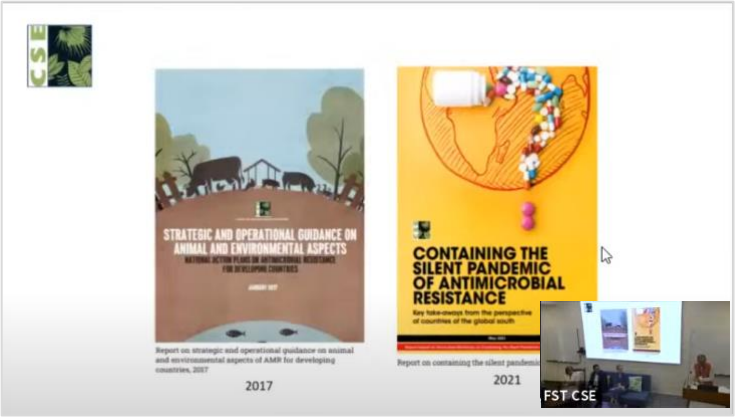
Figure 6. Chains of past reports featured in future reports



Across various CSE's presentations and reports, the 2017 report serves as one of many landmarks to refer back to — to show how far things have progressed. In a 2024 presentation, for example, CSE team member Amit Khurana displayed the report's cover on screen, as a visual aid to depict the "sources" CSE has drawn its learnings from over the years.[477] (See Figure 7).

Figure 7. Presentation using reports to discuss significant moments

[476] "Containing the Silent Pandemic of Antimicrobial Resistance: Key Take-Aways from the Perspective of Countries of the Global South," 27; Khurana, Sinha, and Bhati, "Conserving the Use of Critically Important Antimicrobials in Food-Producing Animals: Gaps and Possibilities in Global Guidance and Indian Policy Framework," 66.
[477] Khurana, "What Should Low-and Middle-Income Countries (LMICs) Focus On," no. 14:32.



Using the past reports as part of this expanded delivery is just one small part of CSE's public argumentation about AMR. However, it shows an important future use of this type of policy report. More symbolic than instrumental or conceptual, the report serves — long after publication and final dissemination — as a tool to strategically mark a moment in time. For CSE's target readers, the report can also serve this milestone marker function by helping them remember changes or turning points in AMR policy discourse. For example, Samuel Kariuki in Kenya most recalled the CSE report representing a shift towards thinking of AMR as about more than human health: "The idea of interconnectedness was starting to appear at that time, and I remember the CSE report really promoting that, and standing for that."[478] In Kariuki's recollection, the entire report marks a moment — capturing a time when AMR policy discourse was starting to shift directions.

Using their past reports in this way appears to have served CSE well, and the organization has continued to build its credibility and influence in global AMR policy conversations. Since the CSE report in 2017, there has been increased global attention to the environmental and animal aspects of AMR and to the specific needs of LMIC contexts — the ultimate goals of CSE's rhetorical efforts.

[478] Samuel Kariuki, interview with the author, July 15, 2024.

The lesson from this case is *not* that any single report or organization can direct global policy discourse. The point is recognizing how the report served a rhetorical purpose for CSE over an extended delivery, to help them tell a story of AMR policy progress — and their role in it. In this example, the subsequent rhetors using the report were its own original authors. A takeaway for writers is to consider what their report could "stand for" on a timeline slide or page of other documents. What might come before, and what could follow after? CSE leverages its reports for this milestone marker function, to accumulate a cohesive narrative of progress and influence in AMR policy discourse. This approach seems to be working well for the organization. Over the years, the CSE report-writing team members have been increasingly invited into more and higher-level policy spaces to influence global AMR discussions. For example, Narain was invited to join the IACG, and then the Global Leaders Group on AMR. Khurana has served as an expert reviewer and contributor on many subsequent global policy documents, such as the UN Environment Program's high-profile 2023 report, *Bracing for Superbugs.*[479] As they continue to engage in AMR policy discussions, they persist in using their prior reports — including our case study 2017 document — to situate themselves and the discussion along a path of AMR progress.

Application

Rhetorical theories including circulation, recomposition, and delivery can help explain this persuasive function of the CSE report when used as a milestone marker in subsequent arguments. A key idea to pull from rhetorical notions of circulation is the sense that audiences and authors are constantly in flux — constantly flowing and changing over time. In policy discourse, individuals are constantly coming and going from a given issue space. Considering

[479] "Bracing for Superbugs."

how texts and arguments circulate helps to explain the value reports can offer as milestone markers: in a state of constant flux, reports can help rhetors and readers create more comprehensible timelines of an issue. When linked in a timeline chain, reports can help those arguing about AMR policy orient themselves and others to a shared sense of progress and forward momentum. Within the swirls and flows of circulation, however, newcomers and long-timers alike must constantly make sense of where they are (temporally and spatially) in a complex global policy conversation. Using report texts in this way — as a symbolic marker to represent a specific idea and moment — can help orient rhetors to various trajectories of public discussion. Theories of composition for strategic recomposition similarly highlight the movement of rhetoric, with concepts such as rhetorical velocity. In physics, velocity is often defined as speed with direction (with average velocity calculated as object's change in position, divided by the duration of the period). Using reports as landmarks can enable rhetors in a policy community to mark how far arguments have moved, at what speed and in what direction. This understanding can help those arguing after reports are published to continually compose and recompose strategic trajectories of the issue, whether telling stories of forward-movement, marking changes in direction, or lamenting sluggish progress and calling for acceleration. Taking an extended view of the rhetorical situation, this future use helps to expand our sense of delivery, as suggested by Rude.[480] The CSE report-writing team continued to deliver their report long after its initial dissemination and re-circulation, less for the instrumental purpose of sharing its contents (i.e., specific policy recommendations) and more for the rhetorical value of conveying credibility and progress in the area.

[480] Rude, "Toward an Expanded Concept of Rhetorical Delivery."

The other two case studies provide a chance to evaluate whether this heuristic pertains to other rhetorical situations in AMR policy. For both the O'Neill and the IACG report, the heuristic advice to construct a milestone marker aligns with ways the reports enabled subsequent arguments.

Post-publication reception evidence suggests that the O'Neill report has similarly served this function as a marker in stories of global AMR policy. It is often cited in written summaries of AMR's progression as a "landmark" report.[481] The O'Neill report also appears as a title or cover-thumbnail image in presentations depicting different trajectories and timelines of important moments in in AMR policy discourse.[482] (See Figure 8 for an example slide, presented by Kitty Healey, Head of AMR at the Veterinary Medicines Directorate in the UK; the O'Neill report is on the far right.)

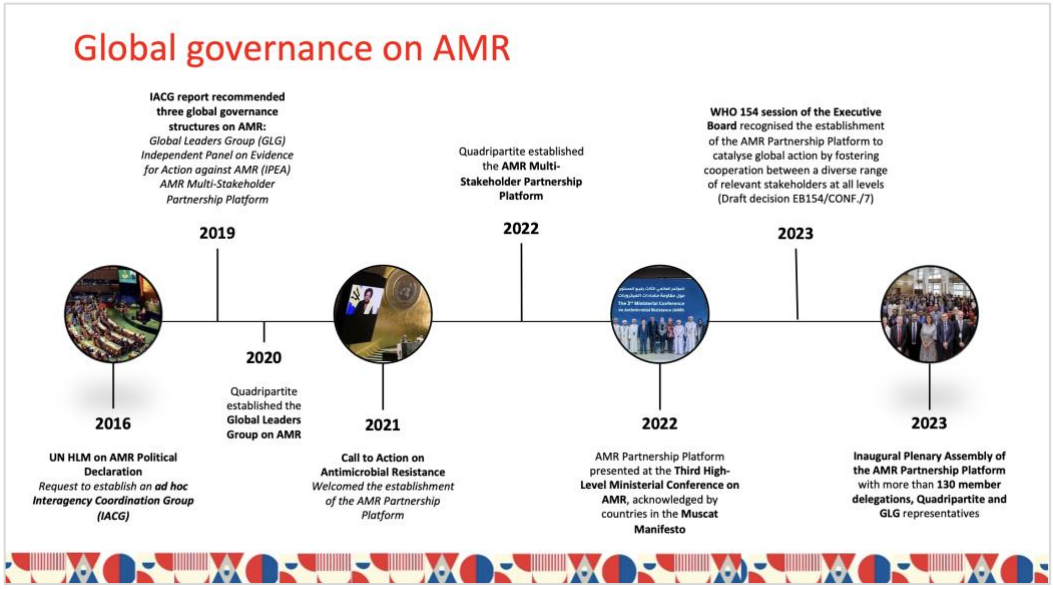
Figure 8. Example use of O'Neill report cover on presentation

[481] Benyamini, "Beyond Antibiotics"; "Jeremy Hunt"; World Bank, "Drug-Resistant Infections: A Threat to Our Economic Future."
[482] Healey, "Antimicrobial Drugs," 8:07.

After its publication, the IACG report was likewise described as "landmark" report.[483] It was similarly used as milestone on various timelines of AMR.[484] (See Figure 9 for select examples of timelines featuring the IACG report.) The IACG report has also been used as a marker of ground covered up to its publication. In a production document presenting the IACG report and what it would contribute, the O'Neill report appears among five prior reports that symbolize existing knowledge, with a circled question mark to denote the IACG actively considering what their report could add to the chain of existing AMR policy documents.[485] (See Figure 10.) Other organizations consciously use existing reports as directional tools. For instance, a 2021 FAO report noted that "The IACG report and its recommendations are an important advocacy tool for FAO's work on AMR and provide direction for future priorities."[486]

Figure 9. Select examples of IACG report on timelines

[483] Harvey, "Antibiotic Resistance as Big a Threat as Climate Change – Chief Medic."
[484] McKinsey & Company, "AMR Framework for Action Supported by the IACG: Working Document"; Getahun, "The Road to UN General Assembly High-Level Meeting on AMR in 2024."
[485] Getahun, "IACG Defining the Future of AMR: Expectations, Progress and Deliverables," 9.
[486] "Evaluation of FAO's Role and Work on Antimicrobial Resistance (AMR)," 18.



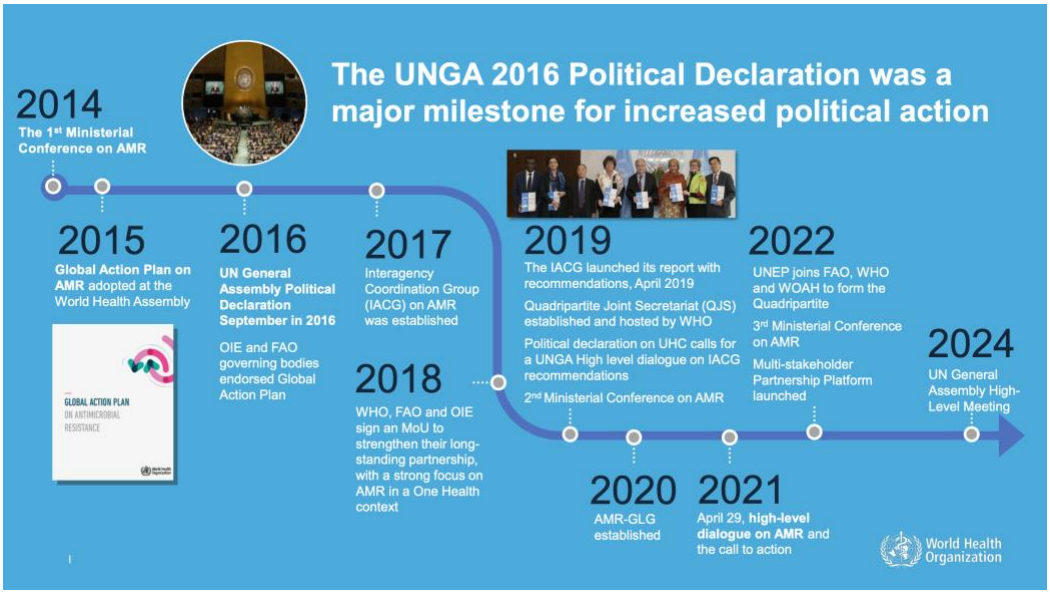
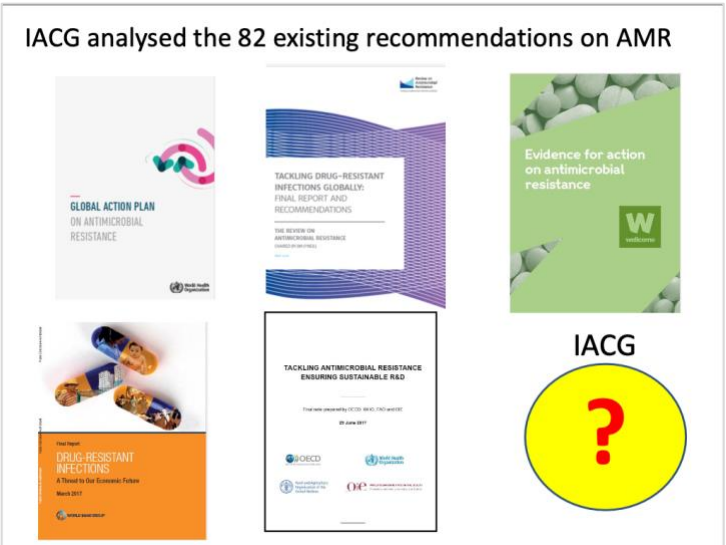


Figure 10. IACG report positioned as adding to a chain of recommendation reports



Practitioner interviews from the IACG case study suggest a keen awareness that reports can and should function as milestone markers for subsequent rhetors. Based on his decades of experience with reports like the IACG's, secretariat team member and report-writer Ian Grubb reflected,

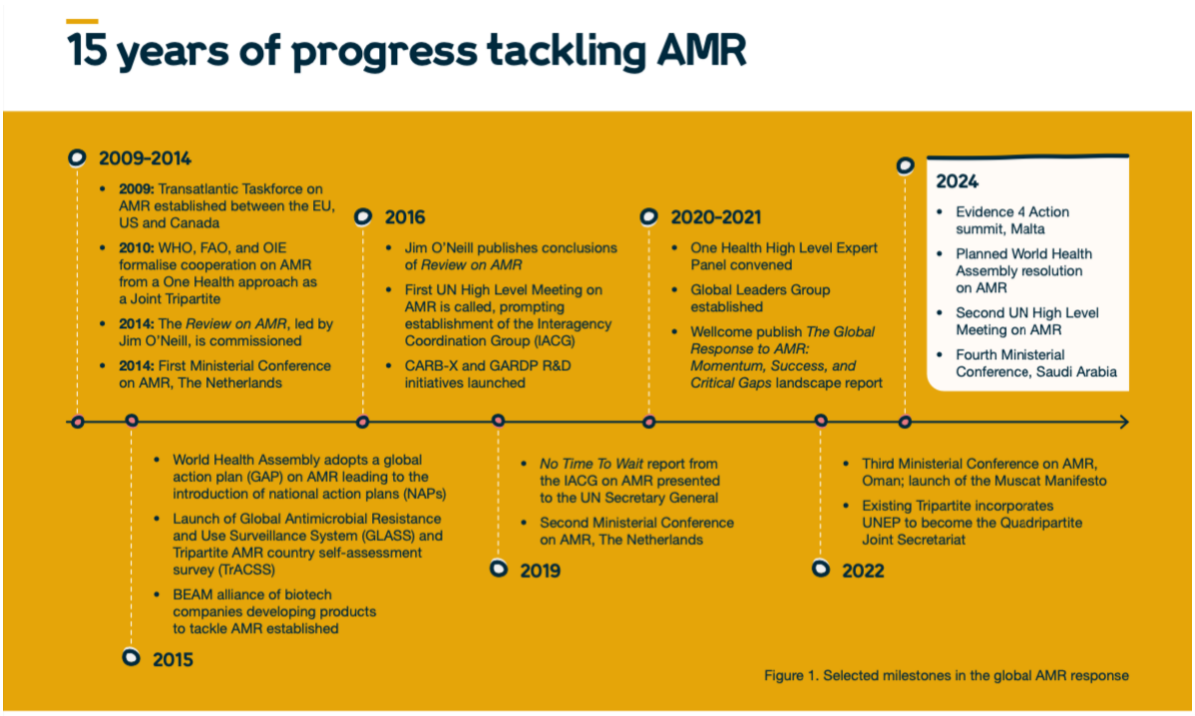
> [A report] can act as a benchmark for where we are, and it can help illuminate where we want to be and what is the path to get there. That's really the best that we can do in these documents. I cannot tell you how few readers there probably are of my work over the last 30 years, honestly. But if they reach people who, with influence — political leaders, activists — then you're in with a chance. So the readership doesn't need necessarily always to be huge to as long as it's the right readership….. [Reports] are important terms of putting a stake in the ground around where we are and what remains to be done, and hopefully sketch out a means of getting there.[487]

Here, part of what constitutes the "right" readership is that they are able to influence others. And, reports can serve that (potentially small) group of influential readers by offering benchmarks, directional orientations, and stakes in the ground along an issue's rhetorical path. IACG member Donald Prater explained he sees the report and similar documents as parts of an ongoing "cycle" where you conduct assessments, make recommendations in a report, implement the recommendations, and then assess again to see if what was implemented is having the desired

[487] Ian Grubb, interview with the author, Sept 27, 2023.

effects, and report what you find.[488] Similarly, IACG secretariat team member Tim Corrigan was emphatic that "the report should always be seen [as] part of a continuum, not an endpoint," and emphasized any success or impact from the report is "about the follow through and ensuring that, it just doesn't become another document on the shelf."[489] Policy reports can help orient those engaged in AMR discourse to key moments and movement in policy over time. For example, summarizing progress on AMR over the last 15 years, the Wellcome Trust uses both the O'Neill and IACG reports on its timeline.[490] (See Figure 11.)

Figure 11. O'Neill and IACG reports serving as timeline milestones



Of the three heuristics proposed, "construct a milestone maker" is perhaps the trickiest to apply for report-writers. How should a report be composed to best serve as a milestone marker? How much does the composition of a report matter if a key anticipated use is to simply cite the whole report, in its entirety? While a report's authors cannot control how others will use it or

[488] Donald Prater, interview with the author, Oct. 22, 2024.
[489] Tim Corrigan, interview with the author, Apr. 25, 2024.
[490] Chinnappa, "Driving Action on Antimicrobial Resistance (AMR) in 2024 [Policy Brief]," 4.

what it may come to symbolize, they can imagine possibilities — and design their report to maximize future use best aligned with their goals. Prompts to enact this heuristic include: Imagine possibilities for the report as a line or thumbnail on a timeline slide — what would it stand for? What could it symbolize? How might the title choice and cover art reinforce your desired message(s)? Authors can anticipate an extended rhetorical situation with many circulating ideas and compose for strategic recomposition by imagining what they would want their report to represent as a single point along a timeline.

Conclusion

This chapter opened by asking what rhetorical purposes a grey literature policy report can serve for readers who are already aware and supportive of action on its given issue. For reports that seek to raise awareness and persuade people to act on a policy issue, it seems these aims are often mediated through the circulation and recomposition of later rhetors over an extended rhetorical situation. In other words, reports are unlikely to land on an unaware policymaker's desk and immediately inspire action; rather, reports are more likely to equip those *already interested* in the issue with rhetorical resources — information, credible sources, sense-making milestones — to use and circulate in subsequent policy briefs, debates, and other discourse.

This chapter makes two key contributions by analyzing the rhetorical function of policy reports on AMR. First, it enriches theoretical understanding of rhetorical circulation, recomposition, and extended rhetorical situations with empirical evidence that demonstrates how reports can equip readers with rhetorical resources for AMR policy discourse. By considering the international circulation of reports in case studies spanning at least five years post-publication, these case studies provide evidence that extant rhetorical theories apply to longer timeframes, and demonstrate that reports' reception, delivery, circulation, and recomposition can persist over

multiple years. Together, the observations in this chapter augment our understanding of the rhetoric of grey literature reports by highlighting how they can serve as persuasive tools for subsequent AMR champions. This also means that if a report primarily reaches a narrow and already-supportive audience, that does not necessarily diminish its rhetorical impact, as its resources may be shared and used long after within networks of power and influence.

Second, it provides guidance for practitioners in the form of three future-focused heuristics for report-writers. When authors successfully fill a vacant niche in the argumentative ecosystem, their reports can achieve lasting positive circulation and influence. While filling a niche could be luck, or unconscious, I argue prospective report-writers would benefit from consciously surveying their argumentative ecosystem and endeavoring to fill a vacant niche via their report. If the resources offered in a report make sense coming from the authors, the report can provide a powerful citation to support subsequent arguments. Authors cannot necessarily change their identity or topic, but they can prioritize and emphasize points in their report that best align with their or their organization's *ethos*. Reports can provide information and citations to aid with persuasion, but they also serve an important function as milestone markers to create coherent narratives and navigate complex global discourse over time. By consciously considering what kind of landmark their report might become, authors can proactively craft their report with that function top-of-mind. These heuristics are only a starting point — future research on real-time writing practices and the long-term impact of rhetorical choices could refine them and reveal new insights. For now, these heuristics reveal promising possibilities and underscore the potential of policy reports not only to inform immediate decision-making but also to serve as enduring, empowering tools for rhetorical action.

Chapter 6. Conclusion

Throughout this dissertation, I have examined three case studies to learn about intermediaries' processes of creating and using grey literature reports as persuasive texts to influence policy based on evidence. Using a textual-intertextual approach to explore a constellation of communication-related issues within the cases, I have identified and explicated promising rhetorical strategies to build intermediary credibility, influence policy agenda-setting, and equip readers for subsequent argumentation. In each chapter, I have also argued that integrating academic perspectives — specifically, combining insights from rhetorical studies with expertise studies, public policy research, and technical communication research— is valuable to enhance our understanding of the cases' production context, text, and reception. This conclusion highlights how the preceding chapters connect to each other and the project's overarching research questions. After a summary of the prior chapters, I will discuss their implications for the research questions and the multiple audiences addressed by this dissertation. I will then highlight several future research directions, and end with final reflections.

This dissertation opened by situating this project within the ongoing study of evidence use in policymaking. I argued that, although extensive literature addresses evidence-to-policy gaps, important questions about communication, intermediaries' processes, and textual rhetorical choices remained underexplored. To address these areas, the introductory chapter proposed a rhetorical approach to studying intermediaries' texts in AMR policymaking. By introducing rhetorical analysis as a complement to existing approaches, the chapter laid the foundation for a case-based rhetorical inquiry into AMR policy communication. Chapter 2 then presented the research approach and texts underpinning this dissertation's analysis. I explained the benefits of

textual-intertextual rhetorical analysis for this project, and detailed my process to select cases and create databases containing hundreds of texts and 23 qualitative interviews.

In Chapter 3, I turned to analysis of the case studies, starting with a focus on intermediaries' unique rhetorical situation. While these people, teams or organizations might be well-established experts in their respective areas, when serving in an *intermediary* role, they must establish credibility across multiple stakeholder communities. Based on analysis across the cases, I argued that successful intermediaries cultivate an *ethos* of *interactional expertise*. I demonstrated how intermediaries can deploy at least two rhetorical strategies to develop this *ethos*. First, they can perform an extended invention process (i.e., publicly showcase ways they learned over time and actively engaged with a wide variety of stakeholders). Second, intermediaries can enact and emphasize inclusivity, transparency, and independence as key virtues. Together, these rhetorical strategies help intermediaries function as credible evidence communicators in complex, multi-stakeholder policy contexts.

Chapter 4 focused on one of the central goals of these reports: to increase the profile of AMR as an issue on policy agendas. While public policy theories like the Multiple Streams Framework can help explain how issues gain attention, they offer less guidance on persuasive communication. I argued rhetorical theory provides a complementary lens. Analysis combining Multiple Streams with rhetorical theory revealed three text-based strategies that can contribute to reports' agenda-setting success. First, reports can deploy an urgency-possibility pattern of argument, to first establish a sense of crisis, then follow up with balancing claims of political feasibility and optimism. Second, reports can strategically highlight moments of increased political attention and momentum around an issue, relating to concepts of rhetorical *kairos* and policy windows from the Multiple Streams Framework. Third, reports can use strategic repetition

of numbered lists and headings to amplify key messages. This chapter demonstrated promising ways that intermediaries writing reports can integrate insights from rhetoric and public policy studies to enhance a report's persuasiveness for agenda-setting purposes.

In Chapter 5, I argued that reports function not just as persuasive tools in the moment but as enduring rhetorical resources that equip readers with information, citations, and landmarks to use in subsequent policy discourse. The case study reports aimed to raise awareness and spark action upon publication, but much of their impact depended on their ongoing use by others. Analyzing post-publication circulation, this chapter distilled three heuristics for report-writers to consider when trying to build their reports' longevity and usefulness as tools in ongoing policy discourse. First, writers should "fill a vacant niche" by identifying and addressing a gap in the policy discourse to ensure their report provides valuable, new rhetorical resources. Second, writers should "leverage source-resource congruence" by aligning their report's content with the credibility and *ethos* of its authors to maximize its utility as a persuasive citation. Third, writers should "construct a milestone maker" by positioning their report as a reference point or landmark to help subsequent champions craft coherent policy narratives of progress to date, situating their work along a pathway toward a desired future. Investigating how grey literature reports are used after publication underscores that these texts can inform in the moment, but can also equip and empower subsequent rhetors. The rhetorical value of a grey literature policy report lies not only in what it says, but in how well it equips others to argue.

Taken together, the three analysis chapters suggest there is much we can learn from rhetorical analysis of grey literature case studies, and many promising strategies that could be applied to future efforts. To summarize this project's contributions, I will revisit the initial four

research questions that guided this project's inquiry, across production context, text, reception, and learning opportunities.

Production Context

Considering the production context of reports, I initially asked: how do intermediaries navigate rhetorical choices when creating their texts? This is a multifaceted question, which could be addressed in many different ways. This curiosity about production context and rhetorical choices led to more specific questions in Chapter 3, which investigated strategies that intermediaries can use to establish their credibility with multiple communities in the process of creating their reports. The resulting analysis illustrates that one way intermediaries can navigate rhetorical choices during text production is by cultivating an *ethos* of interactional expertise, which leverages the advantages of their intermediary position and mitigates potential disadvantages. While Chapter 3 is the most specifically focused on production, the other analysis chapters also engage with issues of production context. In Chapter 4, the rhetorical strategy of textually emphasizing opportune political moments and forward momentum illustrates how intermediaries can both reflect and shape their production contexts. In Chapter 5, observations of subsequent report circulation also address production context by highlighting that intermediaries can perceive the current argumentative "ecosystem" (i.e., production context) and identify vacant niches to address in their reports. I argue that sensing and filling such a niche increases the likelihood that report readers will find the intermediaries' reports useful.

Across the cases and chapters, there are many examples of intermediaries consciously considering and making choices based on the situation they faced when producing their texts. Interviews with report-writing teams reveal authors grappled with a wide range of rhetorical considerations – their audience, timing, exigence, etc. — and many of their choices are carefully

considered and intentional. For instance, the O'Neill report team was deliberate in their strategy of publishing interim texts to sustain attention on AMR leading up to the final report. The IACG was thoughtful about its public engagement process and what it aimed to accomplish — namely, broad-based buy-in for its recommended AMR policy actions. CSE was deliberate in the timing of their workshop and report publication to coincide with the global awareness week and deadline for national action plans. These and many other examples present a picture of intermediaries as conscious navigators within the stream of history. However, the cases also suggest that much navigation is unconscious and instinctive, or at least less deliberately considered. In practice, decisions about a report's rhetorical strategies are often made quickly.[491] A report's production context is dynamic, and intermediaries must continually assess and adapt their writing processes. It is arguably impossible for any intermediary to consciously and continually deliberate on every changing element of their production context when writing a report. Together, these chapters offer a curated list of rhetorical concerns for intermediaries to prioritize — including how to cultivate an *ethos* of interactional expertise; how to manage agenda-setting through argument ordering, timing, and repetition; and how to write with future uses in mind.

Textual Analysis

At the outset of this project, I also posed a question about the texts themselves: what significant rhetorical moves exist in the texts intermediaries produce? The question of what counts as a significant move (i.e., sufficiently important to be worthy of attention; noteworthy) itself raised definitional questions. In this project's analysis of rhetorical moves in the report

[491] The swift nature of practitioners' rhetorical decision-making and invention was also noted in Silvestro's observations of a local non-profit's rhetorical processes. Silvestro, "Changing the Conversation."

texts, I defined "significant" moves as those that stood out to me as particularly puzzling, interesting, or unexpected, based on existing rhetorical literature and evidence about the reports' production and reception. In addition, these moves could not be merely decorative or routine. To claim a move was significant, I had to be able to argue it played a role in the text's rhetorical impact.

This guiding interest in significant rhetorical moves led to Chapter 4's specific study of rhetorical moves in the reports for policy agenda-setting purposes. By integrating a public policy theory (Multiple Streams) with insights from rhetorical theory, this analysis highlighted textual moves most relevant to agenda-setting. Reception evidence and cross-case comparison further refined my focus on rhetorical moves that were theoretically relevant, had evidence of impact, and surfaced as salient across all three cases. While Chapter 4 was most focused on textual moves, other chapters also relate to this question. Chapter 3 provides examples of how intermediaries can appeal to an *ethos* of interactional expertise with strategic textual moves, such as by describing their invention process, citing their prior interim publications, referencing various stakeholders' direct contributions, and including a diverse list of acknowledged contributors. Chapter 5 illuminates how strategically including or emphasizing certain content in the report texts — for example, including information that fills a vacant niche — appears to enhance the reports' usefulness in post-publication circulation and recomposition.

Despite exploring many rhetorical moves in these reports, this dissertation still only scratches the surface of interesting and potentially significant moves within these cases. I selected moves to focus on based on existing literature and theories, alongside what I could see from the reception evidence in the cases — and I further prioritized analyses of moves that appeared in more than one case (thus suggesting a potential pattern and a more broadly

applicable finding). Still, much more could be written on countless other significant rhetorical moves in these texts. So, in considering the initial question of textual moves, this dissertation also advocates for increased rhetorical analysis of grey literature reports. While there are strong examples of rhetorical analysis of such reports, their number is dwarfed by the sheer amount of grey literature produced to inform policy. Such reports — including the three studied in this dissertation — required a massive investment to produce and circulate widely in policy, and can generate real but highly variable impacts on policy processes. While such documents may indeed represent a "homely genre that has attracted little scholarly attention" so far,[492] I argue more attention is well warranted. Though grey literature reports may lack the authority of scientific articles, the artistry of poetry, or the prestige of presidential speeches, they are crafted to persuade diverse policymakers to act, and therefore contain a rich repertoire of rhetorical moves ideal for critical analysis.

Reception

Regarding reception, my initial research question asked: What effects do intermediaries' rhetorical choices and the moves in the reports have on readers? This broad question of reception led to Chapter 5's specific observation that the reports' awareness-raising goals were mediated by the subsequent rhetoric of report readers. Chapter 5 responds to the original question by proposing that at least one way the report texts affected readers was by strategically equipping them with rhetorical resources to use in subsequent arguments about AMR. This question also informed the other analysis chapters, because each considered intertextual reception evidence. For example, the strategies in Chapter 4 were selected as significant because they could be traced

[492] Rude, "Environmental Policy Making and the Report Genre," 78.

through to evidence of positive reception by various audiences. While policy agendas are complex and shaped by myriad factors, Chapter 4 argues that some key rhetorical moves in these texts helped advance AMR on policymakers' agendas by making the issue feel urgent but solvable, politically timely, and comprehensible.

Additionally, Chapter 3 highlighted how intermediaries' successful appeals to *ethos* can increase the chances of their target audiences seeing them as credible, persuasive sources. These findings challenge any linear sense of rhetorical invention and delivery — or of texts followed by effects — because the intermediaries involved stakeholders throughout the report writing process. This complicates definitions of writers and readers — are the policymakers who consulted on the reports still readers? How do we account for the rhetorical effects of having participated in a text's production? These cases suggest that rhetorical effects of a text can stem from more than the written document alone — how the document is created and shared is also rhetorically important. Longer-term reception evidence offers an additional insight: For intermediaries' appeals to *ethos*, the entire project of writing a report can be seen as a rhetorical strategy to bolster credibility. In other words, the process of writing a report seems to provide access to interactional expertise they could not credibly claim before. After the final reports were published, intermediaries in these cases could point to having written their report in a subsequent appeal to *ethos*. CSE did this across its subsequent presentations, displaying the report cover as visual evidence of its credibility to advise on international AMR policy. Jim O'Neill and several report team members went on to write a book about AMR policy, and many continued commenting and working in the AMR space, benefiting from the credibility they gained through writing the report. After the IACG concluded, secretariat director Haileyesus Getahun was appointed to lead the permanent UN Quadripartite Joint Secretariat on AMR. For the

intermediaries in these cases, the fact of having authored a report has proved an effective appeal to their *ethos* as interactional experts.

Across the chapters, these findings illustrate an extended rhetorical situation which demands that rhetoricians continue to expand our concepts of both invention and delivery. Reports can take months or even years to create, and can involve a wide range of people in the writing process. After publication, the texts can continue to circulate. As illustrated in the analysis chapters, considering reception evidence beyond the moment of publication — in these cases, at least five years afterwards — is valuable to understand the real and potential rhetorical effects of such reports in a policy context. A more cyclical sense of production, text, and reception may be most appropriate when considering the rhetorical effects of intermediaries' reports for policy. Ultimately, rhetorical effects continue to unfold over time, and reports like these remind us that persuasion is not a moment but a process.

Learning Opportunities

The fourth and final research question asked: What opportunities exist to learn from and improve intermediaries' rhetorical processes when creating reports for policymakers? This broad question motivated my inquiry across the chapters. While the cases and their comparisons offer virtually infinite opportunities to learn, the particular opportunities I capitalized on in this dissertation can be summarized in regard to their practical and academic contributions, and by considering their implications for different audiences.

For practical learning, it is a rare opportunity to have the time to look back and learn from these kinds of case studies. In fast-moving policy contexts, there is little time for practitioners to create in-depth case studies and reflect on their report's production, text, and reception. I had the luxury of doing that in this dissertation. From my own work and professional experience, I was

most excited about how rhetorical analysis of such cases can generate practical insights that could be helpful for people writing these kinds of reports in the future. We know from research on professional practice that real-world rhetorical situations are characterized by inherent complexity, uncertainty, instability, uniqueness, and value conflicts.[493] This literature also highlights that practitioners — in this project, the intermediaries — can hone their skill by better understanding and structuring problems, actively reflecting on their work, and by leveraging a rich repertoire of examples.[494] In this dissertation, identifying and describing various rhetorical strategies and heuristics in context enriches the stock of rhetorical strategies a practitioner might consider — and connects those strategies with relevant theories to consider how and why they work in particular contexts. By providing detailed examples linked to both their real-world context and relevant academic theories, this project offers practitioners like me the chance to strengthen our reflective capacities by considering a broader range of rhetorical possibilities when creating, sharing, and using reports. Ultimately, these kinds of case-based lessons are critical for the type of "reflective practice" described by Donald Schön, in which skilled professionals think critically about their actions (in the moment and afterwards), to improve their performance and decision-making.

While many practitioners in intermediary roles may be able to learn from this dissertation's findings, this project is most pertinent to those working in AMR. So, what can AMR intermediaries learn? Since the issue of AMR is so sprawling and complex, I would argue almost anyone communicating about AMR evidence must at some point serve as an intermediary between communities outside their own expertise.[495] In those cases, Chapter 3's findings suggest

[493] Schön, *The Reflective Practitioner: How Professionals Think in Action*.
[494] Kinsella, "The Art of Reflective Practice in Health and Social Care"; Tan, Kocsis, and Burry, "Advancing Donald Schön's *Reflective Practitioner*"; Schön, *The Reflective Practitioner: How Professionals Think in Action*.
[495] e.g., If a microbiologist is writing a report on AMR for policymakers, their report may need to include evidence drawing from health services research, veterinary sciences, climate change science, and more. Although the microbiologist is indeed an expert

intermediaries should pursue opportunities for engagement and learning from a range of relevant stakeholders and find ways to document that engagement — including being willing to publish interim documents that stimulate ongoing discussion. When deciding how and what to communicate, these practitioners should consider how they can optimize their inclusiveness, independence and transparency. Sometimes, these virtues might appear in tension with each other — for example, how might intermediaries be inclusive, but also independent? — and effectively managing those tensions seems important to success. If intermediaries aim to put or raise AMR on a policy agenda, Chapter 4's findings suggest they should carefully consider the main lines of argument and sequence of argument in the report. Arguing for urgency, followed by possibility, is one promising approach. Another promising text-based rhetorical strategy is to emphasize the current moment (whatever it may be) as opportune for action, while highlighting any existing political momentum. While advice to keep reports short is prudent, the cases teach us that strategic repetition of key elements like numbered, listed sections can be important to amplify key ideas. Lastly, AMR intermediaries can consider how Chapter 5's heuristics can spark new ideas. The real test of any heuristic is whether and how they can expand our sense of inventional possibilities. As one example, considering ways to leverage source-resource congruence for AMR arguments helps us to imagine how rhetorically powerful it would be for a large, cancer-focused organization to issue a report on AMR. Many other advocates and sources (including all three case study reports) discuss AMR's impact on cancer treatment. If a respected cancer organization were to step into an intermediary role and write a report on the same point — i.e., that AMR causes massive and growing harms to cancer patients — the report would offer a rhetorically valuable citation for other AMR champions. Overall, for intermediaries writing

in their narrow area of, say, microbial mechanisms of antibiotic resistance, when writing they are required to serve as an intermediary between many other communities of evidence producers and users.

reports in AMR or other areas, this project's findings encourage active reflection and highlight some important and promising areas in which to focus future action.

Turning to academic learning opportunities, this dissertation contributes distinct insights for several scholarly audiences. For the constellation of academics who study the intersections of evidence and policy, Chapter 3 illustrates how rhetorical concepts and analysis can help clarify the complex communication dynamics at play for intermediaries. It shows that classical rhetorical concepts, such as *ethos*, can be leveraged to analyze intermediaries' rhetorical situations and suggest actionable rhetorical strategies based on intermediaries' unique position. Chapter 4 speaks primarily to public policy scholars concerned with policy agenda-setting and Multiple Streams theory. It provides examples of how micro-level rhetorical theories about textual design can be combined with meso- and macro-level public policy process theory such as Multiple Streams, in order to identify and explain three effective rhetorical strategies in the case studies. Lastly, for the community of scholars who study writing and composition (i.e., inventional processes) across technical communication and rhetoric, Chapter 5 contributes empirical evidence to enrich the concept of an extended rhetorical situation, and builds on existing work by considering how those observations could inform intermediaries' writing choices during the process of composition.

Across academic areas, this project's research approach and case study design also contributes to research methodology considerations. These kinds of medium-term (i.e., 5 years or more) case studies combined with a textual-intertextual analysis approach offer a chance to examine empirical data on a timescale that is ideal for policy settings. This time scale and the type of data included enables us to learn from living authors and audiences, but also offers enough time to observe how the impact of a text might unfold on a highly practical timescale —

longer than immediate impact, but shorter than decades-long historical analyses. For rhetoricians in particular, this project highlights the potential value of including author and audience interviews in textual-intertextual analysis approaches. Some key elements of the chapter's investigations were inspired by interview data — for instance, the interviews with author teams emphasized awareness-raising as a key rhetorical goal of their reports, but interviews with readers suggested they were already aware of AMR before reading the reports. This disconnect motivated the analysis in Chapter 5 of how the reports were actually used by readers, and contributed to a more nuanced and richer understanding of how these types of grey literature reports can function in policy contexts.

Future Research

This project raises many additional questions and research possibilities, both as extensions of this study and explorations of adjacent issues. To extend this study's observations, future research deploying ethnographic approaches would be valuable to observe text production processes *in situ*.[496] Observing intermediary teams' real-time collaboration would enable investigation of the complex, team-based writing process and how they manage their multiple levels of contributors and approvers. So much current advice to intermediaries — including the findings of this dissertation — focuses more on what an individual can do than team-level dynamics. Additionally, the large amount of text in the databases could be studied with quantitative content analysis methods to uncover potentially new and complementary insights. For example, looking at similarities and differences in micro-level text construction across the cases, and comparing shifts in language between production texts, report texts, and reception

[496] e.g., as described in McKinnon et al., *Text + Field*.

texts, could yield interesting results. Finally, increasing the number and diversity of topics among case studies could help refine the findings of the chapters, by exploring how they apply in other situations beyond the issue of AMR.

This project also calls for future research on related but distinct research questions. For example, this dissertation has focused on textual analysis, leaving visual rhetoric relatively unexplored. While textual argumentation, framing, and persuasion were central to my inquiry, visuals such as document design, imagery, and infographics also play a role in shaping audience engagement. Future studies could examine how visual rhetoric interacts with textual persuasion in policy reports. Taking a similar approach to textual-intertextual rhetorical analysis, study of multiple cases of images might reveal insights about the dynamics of visual rhetoric in policy contexts. Lastly, while this study included a wide range of foundational rhetorical concepts — *ethos*, *kairos*, invention, delivery, arrangement, amplification, and more — I did not center metaphor in the rhetorical analyses. This was mostly a scoping choice; all studies must have their limits. Since metaphor is such a popular and well-used rhetorical figure, I chose to highlight other rhetorical concepts — inspired in part by arguments from rhetorician Jeanne Fahnestock to look beyond metaphor alone in rhetoric of science studies.[497] Yet, AMR policy discourse features many rich and interesting metaphors ripe for rhetorical analysis. As just a handful of examples: AMR is described metaphorically as a tsunami, glacier, silent pandemic, or slow-motion car crash, where our antibiotic safety blanket is being pulled from us, and we are at war with superbugs to prevent a post-antibiotic apocalypse. Future textual-intertextual rhetorical studies could explore how metaphors emerge and evolve to describe the issue of AMR, and analyze the rhetorical impact of these metaphors in different contexts.

[497] Fahnestock, "Series Reasoning in Scientific Argument."

Closing Reflection

This dissertation has explored how intermediaries create and use grey literature reports as persuasive texts to influence policy — considering production processes, textual features of the reports, and evidence of their reception. One closing reflection is to observe how much rhetorical work occurs beyond the boundaries of the published text — both before, and after it is written. These reports are not static instances of evidence communication, but instead represent ongoing processes of cultivating credibility, anticipating uptake, and supporting ongoing argumentation.

The chapters in this dissertation collectively argue that rhetorical analysis can illuminate promising strategies intermediaries can deploy and adapt to further their persuasive aims. For both scholars and practitioners, this project affirms that intermediary report-writing represents a vital rhetorical skill. In studying these reports from production to reception, this project contributes to scholarly conversations about rhetoric in policy, while also supporting more reflective, intentional practices among those who write reports to inform policy change.

Appendices

Appendix A. Glossary

Term	Definition used in this dissertation
Amplification	In rhetoric, amplification refers to the group of methods that "has to do with increasing the profile of a line of argument to make it more psychologically salient to the audience and more conceptually important in the overall case."[498] Rhetorical amplification is an umbrella term for a set of rhetorical techniques that intensify a point's importance or expand its presence in a text or speech.[499] Gideon Burton's online rhetorical resource *Silva Rhetoricae* describes amplification as "a central term in rhetoric**,** naming a variety of general strategies as well as some very specific procedures or figures of speech."[500] Different methods and meanings for amplification, however, are unified by a common purpose: to bring an audience's attention to desired points or parts of a broader text (be it spoken or written).[501]
Aretē	An Ancient Greek word that translates to excellence, virtue, or moral goodness. Part of the triad that makes up Aristotle's concept of rhetorical *ethos, aretē* is about how a speaker's character can appeal to their audience by demonstrating their excellence and morality.
Bounded rationality	In public policy process theories, bounded rationality refers to the concept that, in a world of almost infinite problems, individuals have finite time and capacity to make decisions. So, real-world policymakers must make choices before they have considered all possibilities or logically clarified their preferences.[502] Bounded rationality contrasts theoretical ideals of decisionmakers who follow linear and logical processes with "comprehensive rationality" to access and process all relevant information for optimal decisions.
Epistemology	Epistemology is the branch of philosophy that studies the nature and origin of knowledge. Epistemologists ask what counts as knowledge, how it is created or obtained, who can create knowledge, and what its conditions are.[503]
Ethos	The persuasive appeal of one's character, especially how this character is established by means of the speech or discourse. "One of the three means of persuasion identified and systematically studied by Aristotle. *Ethos* refers to persuasion through the text's construction of the character or virtue of the rhetor...Throughout history rhetoricians have debated the nature of *ethos*, some maintaining that it is the actual character of the speaker, others arguing that it is more of an image the speaker creates in rhetorical situations."[504] In this dissertation, my definition of ethos aligns with the latter group of rhetoricians — where *ethos* is more about the image rhetors create.

[498] Fahnestock and Tonnard, "Amplification in Strategic Maneuvering," 105.
[499] Killingsworth, Gilbertson, and Chew, "Amplification in Technical Manuals"; Kennedy, "Auxesis."
[500] "Figures of Amplification."
[501] Church, "Amplificatio, Diminutio, and the Art of Making a Political Remix Video: What Classical Rhetoric Teaches Us About Contemporary Remix."
[502] Simon, *Models of Bounded Rationality, Volume 3*.
[503] Lauer, *Invention in Rhetoric and Composition*, 152.
[504] Lauer, 153.

Term	Definition used in this dissertation
Expertise, Experts	Following rhetorician Johanna Hartelius, expertise is defined as a rhetorical construct, negotiated between aspiring experts and potential audiences.[505] Expertise is neither entirely attributed (i.e., must be performed and recognized by others) nor entirely autonomous (i.e., exists independent of external recognition), but is necessarily both. This definition assumes that to be an expert, one must possess "real" knowledge, rhetorically perform as an expert, *and* be recognized as an expert by an audience.
———	A pair of concepts proposed by Harry Collins and Rob Evans, in an effort to better define, demarcate, and test whose expertise is trustworthy in public debates.[506]
Contributory expertise &	Contributory expertise is the ability to actively participate in and contribute to a specific field of study or practice. Contributory experts have both the theoretical knowledge and practical skills needed to advance knowledge within their domain. They have tacit knowledge gained through immersive experience in their field (i.e., they can both "walk the walk" and "talk the talk").
Interactional expertise	Interactional expertise is the ability to master the language and conceptual understanding of a specialist domain, without having practical experience in that domain. Interactional experts can "talk the talk" fluently but lack the skills to "walk the walk" in hands-on practice. Interactional expertise is acquired through "linguistic socialization" with contributory experts.[507]
Eunoia	An Ancient Greek word that translates "goodwill," "friendliness," or "benevolence." Part of the triad that makes up Aristotle's concept of rhetorical *ethos, eunoia* is about how a speaker's character can appeal to their audience by demonstrating their positive intentions.
Grey literature	Documents produced at all levels of government, academia, advocacy, and industry that are protected by intellectual property rights but not controlled by traditional publishers.[508] Grey literature is "posted, not published" — shared online by its authoring organizations, largely outside of systems of scholarly indexing and cataloging.[509] In other words, grey literature consists of documents (e.g., reports, white papers, briefs, guides, case studies) produced by a body where publishing is not their primary activity.
Heuristics	"Modifiable strategies or plans that serve as guides in creative processes. Writing heuristics may try to prompt thinking, intuition, memory, inquiry and imagination without controlling the writer's writing processes. Heuristics are based on expert writers' strategies, which can be taught."[510]

[505] Hartelius, *The Rhetoric of Expertise*.
[506] Collins and Evans, "The Third Wave of Science Studies"; Collins et al., "Experiments with Interactional Expertise"; Collins and Evans, "Expertise Revisited, Part I—Interactional Expertise"; Polanyi, *The Tacit Dimension*; Wynne, "Knowledges in Context."
[507] Collins, "Interactional Expertise as a Third Kind of Knowledge."
[508] These are documents produced by a body where publishing is not their primary activity. This definition draws from sources including: Green, "Wait! What?"; Schöpfel, "Towards a Prague Definition of Grey Literature"; Yoshida et al., "Beyond Academia."
[509] Green, "The Chasm between the Scholarly Record and Grey Literature."
[510] Lauer, *Invention in Rhetoric and Composition*, 154.

Term	Definition used in this dissertation
Intermediary	An individual, team, or organization that serves as a go-between for at least two groups for mutual benefit. This definition is inherently situational (to be an intermediary is not immutable). I focus on intermediaries who find themselves taking an active role as a catalyst for research use between research producers and users. Examples of such intermediaries include think tanks, policy labs, science academies, and foundations. I selected intermediary as my primary term because of its emphasis on linkage and relationships. Colloquially, an intermediary is defined as "a person who acts as a link between people in order to try to bring about an agreement or reconciliation; a mediator."[511] Another relevant definition emphasizes values and perspectives: "Intermediaries are boundary-spanning groups that provide a translating function between principals with different values and perspectives."[512] By centering "groups," the authors of this definition aimed to better capture the wide range of interdisciplinary organizations, including think tanks, philanthropic foundations, and advocacy groups.
Invention	One of the five classical canons of rhetoric, invention concerns finding something to say, and encompasses strategic acts that provide the rhetor with direction, multiple ideas, subject matter, arguments, insights or probable judgments, and understanding of the rhetorical situation.[513] Invention provides guidance in how to begin writing, to explore for ideas and arguments, to frame insights, and to examine the writing situation.[514]
Kairos	In classical rhetorical theory, *kairos* is a multifaceted concept having to do with the opportune occasion for speech – referring to the way a given context for communication both calls for and constrains one's speech. It is a "rhetorical principle of discoursing at the appropriate time and in due measure."[515]
Lines of argument	Broadly, the pathways of reasoning and evidence used to build a persuasive case that appeals to an audience. More specific rhetorical terms and theories regarding lines of argument include *topoi* from classical rhetoric,[516] and *loci* as used in Chaim Perelman and Lucie Olbrechts-Tyteca's *The New Rhetoric*.[517]

[511] Stevenson and Lindberg, "Intermediary."
[512] Gandara, Rippner, and Ness, "Exploring the 'How' in Policy Diffusion," 702.
[513] "Invention."
[514] Lauer, *Invention in Rhetoric and Composition*.
[515] Lauer, 155.
[516] Leff, "Up from Theory"; Walsh, "The Common Topoi of STEM Discourse."
[517] Perelman and Olbrechts-Tyteca, *The New Rhetoric*.

Term	Definition used in this dissertation
Multiple Streams	Multiple Streams is a public policy process theory that aims to explain how issues rise and fall on the governmental agenda. Sometimes called Multiple Streams Framework, Approach or Analysis (and MSF or MSA) or the Multiple Streams model, I refer to the body of work stemming from John Kingdon's 1984 *Agendas, Alternatives, and Public Policies* as Multiple Streams for simplicity.[518] Based on a range of underlying assumptions (e.g., that policymaking is inherently competitive, non-linear, ambiguous), Multiple Streams describes the policy process as encompassing three distinct, parallel streams of activity: the *problem*, *policy*, and *politics* streams. The problem stream contains the issues vying for policymaker attention. The policy stream holds various ideas and potential solutions. The political stream denotes the political factors influencing issue attention, like political mood and elections. For any major policy change to take place, these independent streams must come together when a *policy window* opens, presenting an often-fleeting opportunity to merge or *couple* the streams. This momentary coupling of streams is when an issue becomes a recognised problem on the government agenda. During a window, attention lurches to a policy issue in the problem stream. Simultaneously, a solution is ready in the policy stream, and, in the politics stream, policymakers have the motivation and opportunity to turn it into policy.
Ontology	The branch of philosophy that examines being. Ontologists are concerned with what exists.
Phronēsis	The Greek word for practical wisdom. Part of the triad that makes up Aristotle's concept of *ethos, phronēsis* is about how a speaker's character can appeal to their audience by demonstrating practical wisdom, prudence, and good judgement.
Public Policy	Following Paul Cairney, public policy is "the sum total of government action, from signals of intent to the final outcomes."[519] In other words, it includes the development, enactment, and implementation of a plan or course of action carried out through a law, rule, code, or other mechanism in the public sector.[520] More broadly, policy can be defined as including both "Big P Policy" such as laws, regulations, and ordinances by governments, and "small p policy" such as guidelines and rules imposed by non-governmental organizations and private businesses.
Policymakers	Broadly, as the individuals or organizations involved in the creation and implementation of public policy. This includes elected and appointed government officials, and unelected people (e.g., staff bureaucrats or civil servants, in government and public agencies). Policymaking is a complex, collective activity often involving cooperation across multiple levels and entities within government.[521]

[518] Kingdon, *Agendas, Alternatives, and Public Policies*.
[519] Cairney, *Understanding Public Policy*, 17.
[520] Bogenschneider and Corbett, *Evidence-Based Policymaking*.
[521] Cairney, *Understanding Public Policy*.

Term	Definition used in this dissertation
Policy entrepreneurs	In public policy process theories, policy entrepreneurs are "change agents who work individually and in groups to influence the policy process."[522] They are advocates willing to invest their resources — time, energy, reputation, money — to promote a position in return for anticipated future gain.[523] Specifically, in Multiple Streams, stream coupling is facilitated by policy entrepreneurs, who are defined as the individuals or groups who invest considerable time, energy, and resources in pursuit of agenda change.
Rhetor	The person performing the rhetorical act (moving or persuading an audience, via symbolic action, e.g., writing, speaking).
Rhetoric	The faculty/ability of observing in any given/particular case the available means of persuasion.[524] Rhetoric can be understood in two main ways, as both the "academic field that analyzes suasion as well as the suasion itself that is being studied."[525] While countless definitions and nuances exist among different foci of rhetorical scholarship, rhetoricians generally share an interest in the effects of symbols on people, critically analyzing and dissecting the design and language of texts and other persuasive materials.
Rhetorical theory	Following rhetorical critic Barry Brummett, rhetorical theory is a heuristic device to learn about and guide symbolic action, with its ultimate purpose being pedagogical: "to teach people how to experience their rhetorical environments more richly."[526] The more rhetorical theories in someone's repertoire, and the more practiced they are at recognizing the appropriate use of said theories, the more choices they have to order and shape their rhetorical world.
Science	"The systematic, cumulative pursuit of knowledge about the natural world."[527]
Style	In rhetoric, as one of the five classical canons, style "concerns the artful expression of ideas."[528] If invention addresses *what* is to be said, style addresses *how* this will be said. From a rhetorical perspective style is not incidental, superficial, or supplementary: style is about how ideas are embodied in language and customized to communicative contexts.
Stakeholder	Any actor who has an interest (stake) which a text must account for in order to effectively achieve its communicative aim.[529]

[522] Arnold et al., "Finding, Distinguishing, and Understanding Overlooked Policy Entrepreneurs," 657.
[523] Kingdon, *Agendas, Alternatives, and Public Policies*, 179.
[524] Aristotle, *On Rhetoric*, 14.
[525] Ceccarelli, "Language and Science from a Rhetorical Perspective."
[526] Brummett, "Rhetorical Theory as Heuristic and Moral," 103.
[527] Ceccarelli and Miller, "Rhetoric of Science."
[528] Burton, "Style."
[529] Palmieri and Mazzali-Lurati, "Multiple Audiences as Text Stakeholders."

Term	Definition used in this dissertation
Technical communication research	Academic inquiry concerned with the central question: "How do texts (print, digital, multimedia; visual, verbal) and related communication practices mediate knowledge, values, and action in a variety of social and professional contexts?"[530] Technical communication research features a wide variety of methods, including surveys, interviews, usability tests, observations, focus groups, case studies, experiments, and ethnographies, and is concerned with exploring and improving communication practice.[531]
Voice	The way an author presents themselves in a text, using a constellation of tone, personality, vocabulary, syntax, and other style elements. Different academic fields define and use the concept of voice variously (e.g., in English, rhetoric), but voice is generally about the distinctive ways of writing associated with particular authors.

[530] Rude, "Mapping the Research Questions in Technical Communication."
[531] Rude, "Building Identity and Community Through Research."

Appendix B. Reporting Checklists

Standards for Reporting Qualitative Research (SRQR) Checklist

Developed by O'Brien et al.[532]

#	SRQR Checklist Item	Chapter (page/s)
	Title and abstract	
1	**Title** - Concise description of the nature and topic of the study identifying the study as qualitative or indicating the approach (e.g., ethnography, grounded theory) or data collection methods (e.g., interview, focus group) is recommended	Title page
2	**Abstract** - Summary of key elements of the study using the abstract format of the intended publication; typically includes background, purpose, methods, results, and conclusions	Abstract
	Introduction	
3	**Problem formulation** - Description and significance of the problem/phenomenon studied; review of relevant theory and empirical work; problem statement	1. Introduction (1-16)
4	**Purpose or research question** - Purpose of the study and specific objectives or questions	1. Introduction (15-16)
	Methods	
5	**Qualitative approach and research paradigm** - Qualitative approach (e.g., ethnography, grounded theory, case study, phenomenology, narrative research) and guiding theory if appropriate; identifying the research paradigm (e.g., postpositivist, constructivist/ interpretivist) is also recommended; rationale	2. Research Approach and Texts (20-34)
6	**Researcher characteristics and reflexivity** - Researchers' characteristics that may influence the research, including personal attributes, qualifications/experience, relationship with participants, assumptions, and/or presuppositions; potential or actual interaction between researchers' characteristics and the research questions, approach, methods, results, and/or transferability	2. Research Approach and Texts (33-34)
7	**Context** - Setting/site and salient contextual factors; rationale	2. Research Approach and Texts (35-48)
8	**Sampling strategy** - How and why research participants, documents, or events were selected; criteria for deciding when no further sampling was necessary (e.g., sampling saturation); rationale	2. Research Approach and Texts (23-34)
9	**Ethical issues pertaining to human subjects** - Documentation of approval by an appropriate ethics review board and participant consent, or explanation for lack thereof; other confidentiality and data security issues	2. Research Approach and Texts (24)
10	**Data collection methods** - Types of data collected; details of data collection procedures including (as appropriate) start and stop dates of data collection and analysis, iterative process, triangulation of sources/methods, and modification of procedures in response to evolving study findings; rationale	2. Research Approach and Texts (26-34)

[532] O'Brien et al., "Standards for Reporting Qualitative Research."

#	SRQR Checklist Item	Chapter (page/s)
11	**Data collection instruments and technologies** - Description of instruments (e.g., interview guides, questionnaires) and devices (e.g., audio recorders) used for data collection, if/how the instrument(s) changed over the course of the study	2. Research Approach and Texts (26-34), Appendix E (212-218)
12	**Units of study** - Number and relevant characteristics of participants, documents, or events included in the study; level of participation (could be reported in results)	2. Research Approach and Texts (26-34)
13	**Data processing** - Methods for processing data prior to and during analysis, including transcription, data entry, data management and security, verification of data integrity, data coding, and anonymization/de-identification of excerpts	2. Research Approach and Texts (26-34)
14	**Data analysis** - Process by which inferences, themes, etc., were identified and developed, including the researchers involved in data analysis; usually references a specific paradigm or approach; rationale	2. Research Approach and Texts (21-23)
15	**Techniques to enhance trustworthiness** - Techniques to enhance trustworthiness and credibility of data analysis (e.g., member checking, audit trail, triangulation); rationale	2. Research Approach and Texts (32-33)
	Results/findings	
16	**Synthesis and interpretation** - Main findings (e.g., interpretations, inferences, and themes); might include development of a theory or model, or integration with prior research or theory	Chapters 3-5
17	**Links to empirical data** - Evidence (e.g., quotes, field notes, text excerpts, photographs) to substantiate analytic findings	Chapters 3-5
	Discussion	
18	**Integration with prior work, implications, transferability, and contribution(s) to the field -** short summary of main findings; explanation of how findings and conclusions connect to, support, elaborate on, or challenge conclusions of earlier scholarship; discussion of scope of application/generalizability; identification of unique contribution(s) to scholarship in a discipline or field	6. Conclusion
19	**Limitations** - Trustworthiness and limitations of findings	6. Conclusion
	Other	
20	**Conflicts of interest** - Potential sources of influence or perceived influence on study conduct and conclusions; how these were managed	Acknowledgments
21	**Funding** - Sources of funding and other support; role of funders in data collection, interpretation, and reporting	Acknowledgments

TRIPLE C Reporting Principles

Developed by Shaw et al., the *TRIPLE C Reporting Principles for Case Study Evaluations of the Role of Context in Complex Interventions* synthesizes ideals to advance the application of case study methodology as a means of evaluating "complex system-level interventions and better understanding of the transferability of system change intervention."[533] While the principles focus on studies of complex health interventions, its recommendations are relevant to case-based studies of complex rhetorical interventions as well.

#	Triple C Principle	Chapter (pages)
	Title and abstract	
1	**Title** - Is the term 'case study' used in the title and/or subtitle, index, key words, or abstract?	Title page (uses "cross-case")
2	**Abstract** - In the abstract or summary, have the authors included brief details on: the policy, programme, intervention or initiative under evaluation; programme setting; purpose of the case study research; case study question(s) and/or objective(s); case study research strategy; data collection, documentation and analysis methods; key findings and conclusions?	Abstract
	Introduction	
3	**Terminology** - Have the researchers described how they are using key terms related to case, context and complexity/complex intervention in their study, e.g. by including definitions, descriptions or examples? If no descriptions are provided, have the authors provided their reasons for not doing so?	Throughout, and in Appendix A. Glossary
4	**Philosophical bases** - Have the authors provided explanations about: a) what they assume about the nature of reality (ontology)? b) how they think they can find out about that reality (epistemology)? c) whether their methods follow from their assumptions?	2. Research Approach and Texts (33-34)
5	**Research questions -** Have the authors set out clear research questions to be answered by their case study design?	1. Introduction (15-16)
6	**Rationale for doing case study research -** Have the authors justified: (a) why they have chosen a case study design for their research? And (b) their particular approach, including in relation to literature on the methodology of case study research?	2. Research Approach and Texts (24-24)
7	**Context, complexity and relationship to the intervention -** Have the authors: a) described how they have interpreted complexity, in relation to context, the intervention, and how they interact? and b) explained how they have designed their study to investigate such complexity, including how complexity shaped the case?	2. Research Approach and Texts (21-23) and throughout Chapters 3-5
8	**Ethical approval and considerations -** Have the authors stated whether the case study research required and has gained ethical approval from the relevant authorities, and provided details as appropriate? If ethical approval was deemed unnecessary, have the authors explained why?	2. Research Approach and Texts (24)
9	**Empirical methods -** Have the authors described: a) how data were produced (when, by whom, from whom and how) and how they were analysed? b) how their methods relate to their research questions, design and approach? and c) how different data are integrated in the case analysis?	2. Research Approach and Texts (20-50)

[533] Shaw et al., "TRIPLE C Reporting Principles for Case Study Evaluations of the Role of Context in Complex Interventions."

#	Triple C Principle	Chapter (pages)
	Results	
10	**Findings -** Have the authors presented their findings in ways that: a) convey sufficient richness to illuminate the case? b) provide justification for any interpretive inferences?	Chapters 3-5
11	**Use of theory** - Where authors have used theoretical concepts or frameworks in their case study research, have they described and justified these?	1. Introduction (8-10), throughout Chapters 3-5
	Discussion	
12	**Generalizability and transferability -** a) Have the authors explained any implications of their findings beyond their immediate context (e.g. in terms of their generalisability, transferability or usefulness)? b) If they stated that their findings have implications beyond their case, have the authors included sufficient information about the key contextual conditions and historical path-dependencies so that people can make informed judgements on the relevance of the findings for other contexts and settings?	Chapters 3-5, 6. Conclusion
13	**Researchers' perspective and influence -** Have the authors: a) offered critical reflections about how their position, status and perspectives may have shaped the research and the interpretation of findings? And b) included how the case study findings may have challenged their prior assumptions?	a) 2. Research Approach and Texts (33-34); b) not included.
14	**Strengths and limitations -** Have the authors discussed both the strengths of the case study design and its limitations? Have they included (but need not be limited to) considerations of all the steps in the case study evaluation processes?	2. Research Approach and Texts (48-50)
15	**Conclusions and recommendations -** Are the authors' conclusions and recommendations supported by their findings? If relevant, have the authors considered the implications of their findings for current research, policy or practice?	6. Conclusion
16	**Funding and conflict of interest -** Have the authors stated the funding source (if any) for the case study research, the role played by the funder (if any) and any conflicts of interests of the authors?	Acknowledgments

Big Q Qualitative Reporting Guidelines

Developed by Braun and Clarke, these guidelines seek to address what they see as shortcomings of current qualitative research checklists, such as the Standards for Reporting Qualitative Research (SRQR) above.[534] Braun ad Clarke argue the Big Q guidelines should replace checklists like SRQR for "Big Q" qualitative research, which they define as un umbrella term for research that comprises both qualitative techniques and qualitative research values (i.e., a view of knowledge as partial and situated, and researcher subjectivity as a resource for research, rather than a potential threat to research quality). This table is abridged for length, with row numbers added.

#	**Article section or element -** Practices to consider, congruent with Big Q approaches	**Practices to avoid or to avoid defaulting to**	**Notes for reviewers/editors less familiar with Big Q**	**In this dissertation**
	Overall, title and abstract			
1	**Writing style** - Reflexive, subjective, personalised, humanised, contextualised, passionate, lively, evocative, compelling writing; The researcher 'written in' rather than out of the methodological account	Objective, neutral, detached, distanced, decontextualized, passive, dispassionate writing.	Big Q researchers 'write from a particular standpoint in a particular place and time and only can produce a partial account of their subject-matter'	I use first-person pronouns to describe my choices and make my arguments.
2	**Terminology** - Defining key terms and concepts (if relevant); Explaining chosen terms for any contested terminology.	Stigmatising and pathologizing terminology (consult literature/communities relevant to the research area/topic).	Much terminology in qualitative research is contested. What's important is that the researchers explain their usage rather than conforming to particular – dominant – understandings.	Terms are defined throughout.
3	**Title -** A title that captures the topic area and/or the central storyline of the analysis; potentially also the method/ology. A title that engages, intrigues, entices the reader; If aiming to maximise discoverability, a title that includes 1–2 keywords in first part.	Abbreviations.	NA	Title includes keywords and method.
4	**Abstract and keywords -** Summarising key points of the article; Contextualising the study/topic/research question; Indicating theoretical approach and study design/methodology/practices of inquiry, including participants/empirical materials; Outlining main analytic arguments/observations; Signalling conclusions/implications; Keywords that offer information beyond title, related to topic, approach, etc.	Segmenting the abstract by the sections and content of positivist-empiricist reporting traditions (though this may be required).	Structured abstracts can limit what and how information is conveyed. Allowing flexibility to not use, or adapt, structured abstract headings help not just to enable congruent presentation of Qualitative research, but for the essence of the research to best be conveyed.	Abstract follows guidelines and is not structured by reporting sections.
	Introduction			

[534] "Reporting Guidelines for Qualitative Research."

#	**Article section or element -** Practices to consider, congruent with Big Q approaches	**Practices to avoid or to avoid defaulting to**	**Notes for reviewers/editors less familiar with Big Q**	**In this dissertation**
4	**Background and rationale** - Framing the research as entering a conversation about the issue; Providing a robust context and rationale for the proposed research; Discussing (reviewing/critiquing/synthesizing) existing research, theory, and the wider contexts (e.g., social, policy, practice, political, ideological, etc.) relevant to contextualising the study; Engaging deeply with any existing qualitative research; Situating other knowledge as partial and produced from a perspective (especially when discussing research with a different values base, such as quantitative) – including where relevant, the implications of methodological elements of other studies.	Discussing existing quantitative literature in a way that suggests the author aligns with the philosophical assumptions underpinning it (if these are not congruent with Big Q); Centring critiquing the methodological limitations of existing research, and from a (post)positivist standpoint, as a key foundational justification for your own study (without a clear reason).	Methodological critique per se (pointing out flaws to signal how much better this study will be) is not generally a key foundational justificatory technique for Big Q; in some cases, methodological critique is appropriate (e.g., of problematic assumptions and exclusions, terminology; to make the case for a new – to a topic/field – methodology), but it's not a necessary element in reporting.	See 1. Introduction chapter
5	**Research question, aims, and/or purpose** - Articulating research questions, aims, and/or purpose clearly; Demonstrating methodological congruence between questions and overall approach; Discussing any shift or refinement from a broader/different research question to the one addressed in the article.	Formulating research questions as hypotheses or expectations about what might be 'found;' Implicitly formulating research questions in terms of measuring relationships between variables (e.g., effects of X on Y).	The practice of splitting a dataset is referred to – disparagingly – as 'salami slicing' in quantitative research. This critique sometimes gets deployed unjustly against qualitative research. It is legitimate to report a qualitative study across multiple articles; each article should have a distinct focus.	See chapters: 1. Introduction, 2. Research Approach and Texts
7	**'Owning your perspectives' – discussion of theory** (this content may be addressed instead in the Methodology) - Including information about guiding meta-theoretical assumptions, and any other (e.g., explanatory, political/ideological) theory informing the research; Demonstrating methodological congruence between guiding (e.g., paradigmatic, ontological and epistemological) and any other theory.	Ontological and epistemological incongruence (e.g., claiming constructionism, but focusing on lived experience and treating language as a transparent window onto this); Implicitly or explicitly using objectivist and/or foundationalist thinking, either overall or 'mashed-up' with Big Q assumptions (e.g., using reflexive thematic analysis but assuming data interpretation can be accurate and reliable); Using concepts and terminology incongruent with claimed theoretical framework (e.g., claiming constructionism but drawing on social cognitive constructs of body image, attitudes etc.);	The research and the report should evidence methodological congruence/integrity – meaning theoretical assumptions, research questions, methodology, practices of data generation and analysis, purpose of research etc. 'fit' together conceptually. Incongruence often comes in through mismatches between (stated) theoretical assumptions, and various aspects of the report, such as in the use of language and concepts (e.g., around theme development, research subjectivity, data interpretation), treatment of data, and quality practices. Common language and practices often reflect potentially	See 2. Research Approach and Texts

#	**Article section or element -** Practices to consider, congruent with Big Q approaches	**Practices to avoid or to avoid defaulting to**	**Notes for reviewers/editors less familiar with Big Q**	**In this dissertation**
		Treating theoretically embedded and delimited constructs as theoretically neutral/trans-theoretical.	conceptually incongruent (with Big Q) ideas and assumptions, so it's important to be attuned to language.	
8	**'Owning your perspectives' – discussion of reflexivity -** Discussing researcher professional or personal positioning and experience, or the broader contexts shaping their experiences and perspectives, in relation to the topic and/or participant group and/or their role in shaping the research; Demonstrating critical reflexivity – interrogation of social positioning and how structural and interpersonal dynamics shaped the research, and the reporting; Referencing reflexive journaling as part of research practice if used; Using first person writing style when discussing researcher reflexivity, decisions etc.	Referencing researcher 'bias' (as contamination/threat to objectivity); Referencing researcher 'influence' – framed as possible rather than inevitable; Referencing the researcher's prior understandings/expectations, and framing these (implicitly) as a potential source of contamination/distortion; Writing the researcher out of the research by using a third person writing style.	First person writing is good practice for Big Q, as it positions the researcher in the research. While positioning and 'owning perspectives' is good practice, requiring individual researchers to disclose personal information, especially when it might be discrediting or stigmatising, and/or researchers are members of marginalised communities, is not. There is no ideal location for researcher reflexivity in Big Q reporting, so where reflexivity should appear in an article should not be prescriptive.	See 2. Research Approach and Texts

Methodology

**Note: Braun and Clarke prefer the theoretically embedded term Methodology over the proceduralist term Method as a section title.*

9	**Research design/approach/methodology** (this content may sometimes be better located earlier in the article) **-** Describing the research design/approach/methodology; Providing a rationale for the selected design, etc.; Explaining the conceptual framing for any multi-method or pluralistic (vs. single method) design.	Implicitly positioning quantitative research and designs as the norm/ideal.	Proving a default justification for qualitative research per se, as opposed to quantitative, may be required in certain contexts, but unlikely in those that welcome Big Q.	See 2. Research Approach and Texts
10	**Participants/data sources/empirical materials** - Describing the selection and number of participants/data items, and rationale for these; Explaining the criteria for selection/recruitment strategies; Discussing dataset size and scope with reference to non-positivist qualitative concepts, such as 'information power' or sufficiency, orienting to the quality of the dataset to address the research aims and questions;	Using common terms/concepts like 'sample/sampling' (which connotes 'sampling' from a population for the purposes of statistical generalisation); Justifying 'sample' size/stopping data generation with reference to criteria such as (data/code/theme) saturation (i.e., information redundancy) or statistical	There is no widespread agreement on what constitutes an appropriate number of participants/data items for qualitative research, and for particular types of research question, methodologies and practices of inquiry etc. Determining a sufficient participant group/dataset size involves	See 2. Research Approach and Texts

#	**Article section or element -** Practices to consider, congruent with Big Q approaches	**Practices to avoid or to avoid defaulting to**	**Notes for reviewers/editors less familiar with Big Q**	**In this dissertation**
	Describing the characteristics of participants/data items6 and recruitment/data generation contexts; Describing the relationship between researchers and participants prior to, during, and after the research, including any ethical considerations (e.g., dual relationships, researcher as insider/outsider); Describing how the study purpose was communicated to participants, including any definitions of key terms/concepts explained;	models as these are often not conceptually congruent;	interpretative, situated and (especially in student and other unfunded research) pragmatic judgements. Participant group/dataset size 'anxiety' (such as explanation for a 'small' sample) often reflects the lingering presence of positivism; bigger isn't inherently better – consider the quality of the data (to address the research questions/in relation to methods).	
	Ethical approval and ethical code/principles followed - Detailing institutional ethical approval; In research with participants, describing processes of informed consent; Discussing any study/design/sociopolitical context etc. specific ethical considerations or practices; Where relevant or appropriate, including research materials (participant information, consent form) in supplementary material.	Compromising participant anonymity by the details provided; Research is implicitly/unknowingly exclusionary (which limits the contribution of the research).	Ethical considerations in Big Q often go further, to consider issues beyond those in institutional review, so this section might be expansive.	See 2. Research Approach and Texts
12	**Data generation** (we prefer the term generation over collection or gathering, as it captures the active role of the researcher and acknowledges that data don't pre-exist research as data; they become data through research) **-** Describing and explaining practices of inquiry/data sources chosen (explains e.g., why the method/data source is a good fit with the research question, participant group, guiding theory, etc.); If relevant, explaining the purpose and use of a multi-method or pluralistic design; Discussing the development and characteristics of data generation tool(s)/protocol(s) and including tool(s)/protocol(s) in supplementary material where possible; Discussing 'piloting' if used, and any changes to and evolution of tool(s)/protocol(s)/research design following piloting/review, and subsequently during data generation; Describing the modality (e.g., video call interviews, in person focus groups, online qualitative survey)/setting, and time frame, of data generation, and any other pertinent	Triangulation of data sources (framed in a realist/objectivist way to get closer to the truth/a more accurate understanding); Orienting to replication in how data generation is described; Treating lack of standardisation in data generation method, modality or setting as a problem, a potential source of 'bias' (failure of objectivity); Seeking standardisation (e.g., through the training of researchers) in interactive data generation; Equating data quantity with data quality; Transcription described as 'verbatim' or 'orthographic' with no further details provided;	In Big Q, research 'might seem delayed, late or tardy, behind where it is supposed to be' – for instance, reporting data generated some years past. Within a Big Q orientation, 'older' data is not in and of itself a good reason for rejecting a manuscript – as relevance often continues given the model is not necessarily one of new knowledge superseding old. The idea of timeliness and urgency (of data/analysis) is important to deconstruct in relation to the ways the norms and expectations of academia work against groups such as disabled academics. It is appropriate for accounts of procedures and practices to	See 2. Research Approach and Texts

#	**Article section or element -** Practices to consider, congruent with Big Q approaches	**Practices to avoid or to avoid defaulting to**	**Notes for reviewers/editors less familiar with Big Q**	**In this dissertation**
	procedural details; Noting any audio or video recording of interactive data generation and other data 'recording' practices (e.g., field notes, photography, participant/researcher drawings); Noting who (which author or role) completed any interactive data generation; Describing what, if anything, the researcher disclosed to the participants about their personal or professional positioning or motivation (before or during data generation) if safe to do so; Describing, if pertinent, the skills and experience the researcher(s) brought to data generation; Indicating the length/duration of individual data items and the number of data items (if different from the number of participants), where relevant (e.g., mean duration/length and range of interviews/focus groups, story completion); Describing the preparation of data for analysis: process of transcription of audio/video data; transcription notation system used (transcription key may be included in supplementary material); removal of any identifying information; if and why typographical errors in written data were corrected; use of pseudonyms or participant/data item codes; editing of data extracts presented in analysis.	Simply stating transcript page numbers as a measure of the dataset with no further detail; The data appear to have been edited or 'cleaned up', but there is no acknowledgement of this; Participant validation of the 'accuracy' of transcripts;	foreground some of the 'mess' of qualitative researching: 'transparent research is marked by disclosure of the study's challenges and unexpected twists and turns and the revelation of the way research foci transformed over time.'	
13	**Data analysis procedures -** Describing and explaining the analytic approach; Where relevant, describing the variant of the approach and/or data orientation (e.g., inductive, deductive etc.); Describing who (author or role) analysed the data; Where analysis is collaborative, discussing how this contributed to researcher reflexivity/insight; If using an established approach, describing how the researcher(s) engaged with the analytic process, and how the analysis was developed; If tweaking/changing, or supplementing, the procedures associated with an established approach, explaining how and why;	Citing generic characteristics of an approach (e.g., accessible, flexible) without explaining how these were relevant to the study; When using an established analytic approach, adding alternative/supplementary analytic procedures, without acknowledgement or rationale. Using inter-coder agreement or consensus coding (as measures of coding accuracy/reliability);	One coder/analyst is entirely normal and appropriate within Big Q; it does not present a validity threat to the research. Use of QDAS is not a requirement.	See 2. Research Approach and Texts

#	**Article section or element -** Practices to consider, congruent with Big Q approaches	**Practices to avoid or to avoid defaulting to**	**Notes for reviewers/editors less familiar with Big Q**	**In this dissertation**
	Using supplementary material, if necessary, to provide a fuller account of the analytic process; Using language appropriate to the role of the researcher in developing the analysis. Describing any software (QDAS) used during the analytic process; If tools or modalities used for analysis changed (e.g., QDAS > manual process), reflexively discussing rationale for shift and what gained/lost in different tools; Where relevant, discussing how theory informed the analysis, as 'the analyst's reading glasses'	Simply citing established methodologies as 'brand names', without providing further situated detail around use; Using generic descriptions of procedures or 'technical description of analytical phases', rather than discussing how methods have been used in practice; Incongruent language		
14	**Quality practices -** Discussing any Big Q congruent quality practices not covered elsewhere. Either here or in the discussion, reflecting on any 'limitations' of the dataset/participant group, study design/approach and procedure (with reference to a contextualised Big Q orientation).	Using postpositivist criteria for quality, such as triangulation (to get closer to the truth/a more accurate understanding), analysis agreement/consensus among the research team, corroboration of analysis by another researcher; Using (a foundationalist version of) member checking/participant validation without a congruent – empirical, theoretical or political – rationale.	Congruent quality practices in Big Q can include (where appropriate, but not always): member reflections, crystallisation, other researchers serving as a critical friend/sounding board/mirror to enhance reflexivity, reflexive journaling.	See 2. Research Approach and Texts
	Analysis			
15	**Structure, number, and names of patterns/themes/categories/discourses/narratives (etc.) -** Reporting a clear analytic structure; Reporting an appropriate number of patterns/themes/categories/discourses/narratives (etc.) relative to the length of the article, allowing for depth and detail in the presentation of the analysis.	Overly elaborated/fragmented or unclear analytic structure; Reporting a large number of patterns (etc.) relative to the length of the article; In research using coding, reporting the number of codes (e.g., per pattern) as a validity measure.	Pattern (etc.) names can be playful, fun, provocative, and engage, entice or intrigue the reader. It's not uncommon for brief data quotations or paraphrases to be used in pattern (etc.) names – usually if they capture the core of the pattern.	See Chapters 3-5

#	**Article section or element -** Practices to consider, congruent with Big Q approaches	**Practices to avoid or to avoid defaulting to**	**Notes for reviewers/editors less familiar with Big Q**	**In this dissertation**
16	**Overview of, or introduction to, analysis, if relevant - i**ncluding an analytic map, table or a list of patterns (etc.), or general contextualization of the analysis; Using pattern (etc.) names that align with Analysis section subheadings.	Unexplained headings in the Analysis section (not connected to patterns [etc.] as outlined); Reported patterns (etc.) that don't match the analytic structure previewed.	NA	Not relevant, given this dissertation's format
17	**Theme/category/discourse/narrative (etc.) conceptualization, where relevant** - Using a conceptualization of patterns (etc.) that is congruent with the approach (e.g., themes in reflexive thematic analysis have a central organizing concept and report shared meaning); Explaining/rationalizing any divergences in the conceptualization of patterns (etc.), aligned to methodological congruence.	Mismatch between pattern (etc.) conceptualisation – either for methodological approach, or as described in the Methodology – and what is then reported.	Qualitative research produces many differently conceptualised analytic entities (patterns, etc.). Then within those of the same name/type, there is often considerable variation in how they are conceptualised (e.g., different ideas of 'a theme', 'discourse' etc.).	See Chapters 3-5
18	**Analytic depth -** Providing an analytic narrative (around data extracts) that explains the meaning and significance of the data, and researcher's interpretation of them – guided by principle that 'data do not speak for themselves'; Telling a rich descriptive and/or interpretative story about the data.	Frequency counts for patterns (etc.); Analytic foreclosure (e.g., data generation questions reported as 'themes' etc.); Patterns (etc.) that are thin and one dimensional; Simply paraphrasing data; Data interpretation treated as self-evident; 'Arguing with' the data – the task of Big Q analysis is generally to make sense of the data, not orient to whether it's wrong or right.	Using 'semi-quantification' – the use of 'few', 'some', 'many' etc., usually without precise boundaries for these – may sometimes be appropriate in describing analysis, but isn't a requirement.	See Chapters 3-5
19	**Use of data extracts, where relevant -** Using a sufficient number and range of extracts from the dataset to convincingly and compellingly evidence analytic claims; Introducing and contextualizing data extracts appropriately (so readers can comprehend the content of extracts); Displaying congruence between data extracts and analytic narrative; Balancing appropriately the proportion of analytic narrative and evidentiary data extracts;	In approaches reporting patterning across a dataset, selecting extracts from a small proportion of the participants/data items without any acknowledgement or rationale; Providing no data extracts to evidence analytic claims, only a researcher summary; Writing one sentence/a very brief analytic narrative 'overview' of the pattern (etc.), followed by several data extracts without further analytic elaboration. Without adequate analytic	Further data extracts and analysis can be included in supplementary materials. The appropriate balance of analytic narrative and data extracts will depend on the analytic method/ology used and the particular orientation (e.g., inductive/deductive, experiential/critical, descriptive/interpretative);	See Chapters 3-5

#	**Article section or element -** Practices to consider, congruent with Big Q approaches	**Practices to avoid or to avoid defaulting to**	**Notes for reviewers/editors less familiar with Big Q**	**In this dissertation**
	Appropriately anonymizing data extracts; Ensuring (meta)theoretical concepts informing the analysis, and treatment of language, are congruent with the research approach.	narrative, the reader ends up 'drowning in a sea of endless data'; Insufficient contextualisation of data extracts making the (literal) meaning unclear; Mismatch between analytic claims and data extracts presented to evidence those claims (analysis is not convincing); Mismatch between claimed theory/approach and treatment of language (e.g., constructionism/a performative conceptualisation of language claimed, but data treated as a transparent window onto 'experience').	Data extracts may be used illustratively, as general instances of analytic claims (readily interchangeable with other examples without disrupting the analytic narrative). They can also be used analytically, where the analysis is developed through commentary on specific features of a data extract. An analytic use typically involves fewer data extracts, and more analytic narrative.	
20	**Integration of analysis with existing research and theory -** Drawing on existing research and theory to contextualize analysis and (potentially) to deepen data interpretation – here theory is not primarily about conceptual or metatheory (ontology/epistemology etc.) so much as the explanatory frameworks and concepts that help interpret the data (e.g., healthism; resilience; consent); Weaving such research and theory through the analytic narrative, as relevant.	Separation of data/ 'Results' and interpretation; Description/summary rather than interpretation of data.	Integration of other literature into the Analysis section is common in Big Q: the 'analysis section is … not a "results" section that describes findings without commentary, as you might find in the write-up of an experimental study'. The literature discussed in the Analysis doesn't have to be confined to that discussed in the Introduction.	See Chapters 3-5
	Discussion/Conclusion			
21	**Integration of analysis with existing research and theory -** Drawing analytic conclusions across patterns (etc.); Discussing the contributions the research has made to existing research, theory, etc., oriented to the broader context of the study, both scholarly and societally; Considering how our knowledge has shifted what/how we know about the topic of the research (related to research).	Repetitive pattern-by-pattern (etc.) integration of the analysis with existing literature, rather than telling an overall analytic story or drawing overall conclusions.	The literature drawn on doesn't have to be confined to that discussed in the introduction, and often isn't.	See Chapters 3-5 and 6. Conclusion

#	**Article section or element -** Practices to consider, congruent with Big Q approaches	**Practices to avoid or to avoid defaulting to**	**Notes for reviewers/editors less familiar with Big Q**	**In this dissertation**
22	**Study evaluation/reflection -** Overall reflexive consideration of the context, process, outcomes and potential consequences of the research. Reflecting openly/honestly on strengths and limitations of the study design, practices of inquiry, procedures, researcher's decisions, etc., oriented to the scope and parameters of the research itself; If no separate discussion of researcher reflexivity in this section, reflecting on the researcher's role in shaping the research and the knowledge generated; If relevant, considering what other researchers, such as those working with the same participant community, using the same practices of inquiry, etc., might learn from your study (both the doing of the study, and the analysis produced); Using qualitative conceptions of generalizability.	Orienting to dominant quantitative norms in evaluation, such as describing the 'sample' as 'small', or 'nonrepresentative'; Lack of generalisability framed as a weakness through implicitly conceptualising this concept as statistical generalisability; Researcher bias/influence (as contamination/threat to objectivity) noted as a limitation.	From a Big Q standpoint, a study evaluation/reflection might include consideration of: The characteristics and context of the participant group/dataset; How particular methods and modalities shaped the data generated; How the researcher(s) shaped the data generated; Potential 'transferable' implications of the research.	See 2. Research Approach and Texts and 6. Conclusion
23	**Researcher reflexivity -** Reflecting on the researcher's role in the research process and practices, including (further) researcher reflexivity, where relevant.	Providing a 'laundry list' of identity positions, framed as influencing the research; Evoking the notion of researcher bias/influence (as contamination/threat to objectivity) – including through idea that researcher may have influenced the research.	Within Big Q, researcher 'influence' is understood as inherent – so it's a question of how the research was 'influenced,' not whether. Using 'if' instead of 'how' to discuss influence suggests separation is possible (and perhaps ideal).	See 2. Research Approach and Texts
24	**Implications for future research, policy and practice, where relevant -** Making evidence-based (where available) suggestions for future research (e.g., provide grounds for other groups potentially having different experiences/views); Discussing implications for practice and 'actionable' outcomes.	Providing a 'laundry list' of other groups/communities to research around this issue.	Since complete-population knowledge and/or uncontextualized generalisability are not the aim in Big Q research, it does not make (inherent) sense to suggest researching the topic within another community/group.	See Chapters 3-5 and 6. Conclusion

Appendix C. Initial Long List of Potential Anchor Texts for Case Selection

Highlight = selected cases

Initial searches to compile a long list of eligible anchor texts were conducted with guidance from the University of Washington's Public Policy subject matter librarian, on databases including: Policy Commons (international repository of research from research centers, non-governmental organizations, inter-governmental organizations), ProQuest Congressional, UK Government Hansard, Canadian Government Hansard, World Bank eLibrary, Non-governmental organizations search (custom search engine that searches across a wide variety of NGO websites), Intergovernmental organizations search engine (custom search engine that searches across a wide variety of IGO websites), Factiva (newspaper and trade publication database that includes press releases about reports). Searches also included mining government policy and internal report citations/reference lists (to see what reports policymakers cite in the discussions/decisions, documents and policies they produce) and Google searches for variations of "AMR policy reports" (using a variety of keywords, including antimicrobial resistance, antibiotic resistance, drug-resistant infections, etc., plus policy, white paper, report, brief, briefing note, etc.).

#	Document title	Pub. org.	Country	Pub. date	Authors listed (y/n)	Rationale for policymaker audience	Summary of topic/focus	Initial search source
1	Tackling Drug-Resistant Infections Globally: Final Report and Recommendations	The Review on Antimicrobial Resistance (Independent Commission)	UK	May-16	Y	Many mentions of what policymakers need to do	10 recommendations across a range of topics	Google - initially found before formal searching, referenced often in other texts
2	Stemming the Superbug Tide: Just A Few Dollars More	OECD	Global North	Nov-18	Y	Focus on policy costs and benefits	The findings presented in this publication identify 'best buys' – i.e., affordable, feasible and highly cost-effective interventions – among control policy options for AMR in the human actions should be taken to prevent the health sector.	Snowball: McGill Blog
3	Antibiotic Resistance in Poultry Environment: Spread of Resistance from Poultry Farm to Agricultural Field	Centre for Science and Environment	India	Jan-17	Y	Makes policy recommendations	Summarizes study	Policy Commons
4	No Time to Wait: Securing the Future from Drug-resistant Infections	United Nations	Global North	Apr-19	N	Takes a "One Health" focus - designing and implementing programmes, policies, legislation and research	This report presents the IACG's response to the request from Member States in the 2016 political declaration and makes recommendations for urgent action for consideration by the Secretary-General, Member States and other stakeholders in the global response to antimicrobial resistance.	Snowball: McGill Blog
5	Averting the AMR Crisis: What are the Avenues for Policy Action for Countries in Europe?	World Health Organization	Switzerland	Jan-19	Y	Policy brief (" specifically designed to provide policy makers with evidence on a policy question or priority.")	This policy brief summarizes some of the key policy avenues for tackling antimicrobial resistance (AMR).	Policy Commons

#	Document title	Pub. org.	Country	Pub. date	Authors listed (y/n)	Rationale for policymaker audience	Summary of topic/focus	Initial search source
6	When Antibiotics Fail: The Expert Panel on the Potential Socio-Economic Impacts of Antimicrobial Resistance in Canada	The Council of Canadian Academies	Canada	Jan-19	Y	Commissioned by Canadian government	Aims to provide an evidence-based, authoritative assessment that answers: What is the socio-economic impact of antimicrobial resistance (AMR) for Canadians and the Canadian healthcare system?	Policy Commons
7	Addressing Antimicrobial Resistance	Aspen Institute	USA	Dec-19	Y	Makes direct policy recommendations	Offers a package of “Big Ideas” for confronting AMR, stemming from an in-person conference	Policy Commons
8	Antimicrobial Resistance in G7 Countries and Beyond: Economic Issues, Policies and Options for Action	OECD	Global North	Sep-15	Y	Explicitly target to G7 health ministers	This report was partially funded by the Federal Ministry of Health (Germany) to support the discussions of G7 Health Ministers on this topic.	Policy Commons
9	A Study on the Status of Antimicrobial Resistance in Canada and Related Recommendations	Canadian Government - Report of the Standing Committee on Health	Canada	May-18	Y	Makes direct policy recommendations	Broad study on the status of antimicrobial resistance (AMR) in Canada	Policy Commons
10	Pulling Together to Beat Superbugs	World Bank	Global North (Funded by Norway & Canada, lead author from France)	Oct-19	Y	Mentions policymakers several times, "addressing" AMR is described as policy actions	Focuses on case studies of factors to enable or block AMR interventions in LMIC contexts, argues for reframing AMR as a global development issue and advocates for expanding beyond technical solutions.	World Bank Database
11	Strategic and Operational Guidance on Animal and Environmental Aspects – National Action Plans on Antimicrobial Resistance	Centre for Science and Environment	India	Jan-17	N	"We hope that the countries consider and incorporate this guidance in their National Action Plans"	Summarizes key points from a workshop event - developing guidance for NAPs for developing countries with reference to limiting resistance from antibiotic use in food animals as well as environmental spread of AMR	Policy Commons
12	Combating Antimicrobial Resistance: A One Health Approach to a Global Threat: Proceedings of a Workshop	National Academy of Sciences	USA	Jan-17	Y	Trying to achieve "immediate action" in areas including policy change	Proceedings / summary: To build on this work, to explore developments since the last workshop was convened, and to help parlay knowledge into immediate action	Google Search
13	Drug-Resistant Infections: A Threat to Our Economic Future	World Bank	Global North	Mar-17	Y	Focused on government actions for LMIC	The report highlights actions low- and middle-income countries and their development partners can take to counter AMR, and estimates the investment required.	World Bank Database
14	Assessing the Global Economic and Poverty Effects of Antimicrobial Resistance	World Bank	Global North	Jun-17	Y	In a Policy Research working paper series	Assesses the potential impact of antimicrobial resistance on global economic growth and poverty	World Bank Database
15	When the Drugs Won’t Work: Antimicrobial Resistance and the Future of Medicine	International Longevity Centre – UK (& Pfizer funded)	UK	Jun-17	N	Explicitly explores what policymakers can do	Summarizes key points from a 2016 event - The Jack Watters debate: Tackling antimicrobial resistance in an ageing society, took place on the 16th of November 2016	Policy Commons

#	Document title	Pub. org.	Country	Pub. date	Authors listed (y/n)	Rationale for policymaker audience	Summary of topic/focus	Initial search source
16	Safer Healthcare in Europe: Improving Patient Safety and Fighting Antimicrobial Resistance	Think Tank: European Parliament	Brussels	Jan-15	Y	Policy departments provide in-house and external expertise to support EP committees and other parliamentary bodies in shaping legislation and exercising democratic scrutiny over EU internal policies.	Summarizes the presentations and discussions at the Workshop on 'Safer healthcare in Europe: improving patient safety and fighting antimicrobial resistance', held at the European Parliament in Brussels, on Tuesday 24 February 2015.	Policy Commons
17	Evaluation of the EC Action Plan against the Rising Threats from Antimicrobial Resistance: Final Report	European Commission	Brussels	Oct-16	Y	Recommendations include providing additional coordinated support to Member States, expanding the scope of environmental action and contributing further to international efforts.	The Directorate-General for Health and Food Safety (DG SANTE) commissioned an evaluation of the 'Action Plan against the Rising Threats from Antimicrobial Resistance' in 2015 to assess its relevance, effectiveness, efficiency, coherence and added value.	Policy Commons
18	Measures to Tackle Antimicrobial Resistance through the Prudent Use of Antimicrobials in Animals: Overview Report	European Commission	Luxembourg	Jan-18	N	Aims to give examples of good policy practice	Overview of the efforts being made in the EU to tackle issues relating to antimicrobial resistance (AMR) in animals	Policy Commons
19	New Weapons to Combat Antibiotic Resistance: Results Pack on Antimicrobial Resistance	Community Research and Development Information Service	Luxembourg	Jun-18	N	Compiled by European Commission	Summarizes research projects / efforts to "strengthen research on AMR and enable the EU to actively promote global action and play a defining role in the fight against AMR."	Policy Commons
20	Antimicrobial Resistance: How Substandard Medicines Contribute	American Enterprise Institute	USA	Nov-15	Y	Focuses on India's role/policy needs	Summarizes studies on antibiotic quality in middle- and low-income countries	Policy Commons
21	External Societal Costs of Antimicrobial Resistance in Humans Attributable to Antimicrobial Use in Livestock	National Bureau of Economic Research	USA	Aug-19	Y	Working paper version of academic article? Audience could be clearer	Present a model to quantify the external costs of antimicrobial use in animal agriculture on antimicrobial resistance in humans.	Policy Commons
22	Addressing Antimicrobial Resistance: Progress in the Animal Sector, But This Health Threat Remains a Challenge for the EU	European Union	Belgium	Nov-19	N	Recommend ways to improve the Commission's response to AMR through better support to Member State national action plans; promoting better monitoring and the prudent use of antimicrobials; and strengthening strategies for boosting research	Examined how the Commission and relevant EU agencies managed their support to Member States and the EU funded research aimed at fighting antimicrobial resistance.	Policy Commons
23	Antimicrobial Resistance: Antibiotics Stewardship and Innovation	Brookings Institute	USA	Jun-14	Y	Emphasizes regulatory interventions	Focuses on key obstacles to antibiotic development & proposals to expedite the development and regulatory review of antibiotics while ensuring that safety and efficacy requirements are met.	Policy Commons
24	Antimicrobial Resistance: Report	Survey and report by Kantar Public Brussels at the request of the European Commission, Directorate-General for Health and Food Safety	Brussels	Nov-18	N	Study commissioned by EU	Reports on survey of public attitudes /awareness of AMR	Policy Commons

Appendix D. Interview Participant List

Interview participants are listed alphabetically by last name, followed by: the anchor text(s) they connect to [in square brackets], their role/affiliation(s) at time of anchor text publication (including, in parentheses, comments on role/affiliation as of December 2024 as relevant); date interviewed.

1. **James Anderson** [O'Neill report], Director, External Partnerships, GlaxoSmithKline (in 2024, Chair of the AMR Industry Alliance Board); interviewed Apr. 3, 2024.
2. **Hala Audi** [O'Neill report], Head of the Review Team (in 2024, Chief Executive, UNIZIMA; Chief Alliance Officer Chief Alliance Officer, UNIVERCELLS); interviewed Oct. 17, 2023.
3. **Tim Corrigan** [IACG report], Secretariat team member (in 2024, Technical Officer at WHO on Global Preparedness Monitoring Board Secretariat); interviewed Apr. 25, 2024.
4. **Sally Davies** [O'Neill report; IACG report], UK Chief Medical Officer (in 2024, UK Special Envoy on Antimicrobial Resistance); interviewed April 16, 2024
5. **Akshay Dhariwal** [CSE report], Director of India's Centre for Disease Control (in 2024, retired); interviewed Jan. 25, 2024.
6. **Haileyesus Getahun** [IACG report], Director of IACG secretariat (in 2023, Director of Global Coordination & Quadripartite Joint Secretariat on AMR; in 2024, chief executive officer of Health Development Partnership for the African and Caribbean Regions); interviewed Sept. 11, 2023.
7. **Ian Grubb** [IACG report], Secretariat team member, writer; interviewed September 27, 2023.
8. **Kitty Healey** [O'Neill report; CSE report], Head of Antimicrobial Resistance Team, Veterinary Medicines Directorate, Department of Environment, Food and Rural Affairs, UK; interviewed March 1, 2024.
9. **Maria Helena Semedo** [IACG report], FAO Deputy Director-General; IACG group member; interviewed June 27, 2024
10. **Kevin Hollinrake** [O'Neill report], UK Member of Parliament for Thirsk and Malton; interviewed Jan. 29, 2024.
11. **David Hyan** [IACG report], Senior Program Officer on Pew Charitable Trust AMR program (in 2024 AMR program director, then transitioned to project director of state health solutions); interviewed April 4, 2024.
12. **Samuel Kariuki** [CSE report], Chief Research Officer, KEMRI (in 2024, Eastern Africa Director, Drugs for Neglected Diseases initiative); interviewed July 15, 2024.
13. **Tapiwanashe Kujinga** [CSE report], Chair for the Technical Working Group on Education and Awareness AMR National Action Plan Core Group, Zimbabwe (in 2024, Director of the Pan-African Treatment Access Movement); interviewed Jan. 17, 2024.
14. **Tapfumanei Mashe** [CSE report], National AMR Coordinator at the Ministry of Health and Child Care, Zimbabwe; interviewed Mar. 11, 2024.
15. **Anthony McDonnell** [O'Neill report], Head of Economic Research (in 2024, Center for Global Development Policy Fellow); interviewed Sept. 25, 2023.
16. **Sunita Narain** [CSE report; IACG report], Director General, CSE; IACG group member; interviewed Nov. 8, 2023.
17. **Jim O'Neill** [O'Neill report], Chair of the review; interviewed Sept. 6, 2023.

18. **Laura Piddock** [O'Neill report], Professor of Microbiology, University of Birmingham (in 2024, also Scientific Director, Global Antibiotic R&D Partnership); interviewed Mar. 19, 2024.
19. **Donald Prater** [IACG report], Acting Assistant Commissioner for Food Safety Integration, Office of Foods and Veterinary Medicine, Food and Drug Administration, US; IACG group member (in 2024, Associate Commissioner for Imported Food Safety, FDA); interviewed Oct. 22, 2024.
20. **John Rex** [O'Neill report, IACG report], Senior Vice-President and Chief Strategy Officer, AstraZeneca Antibiotics Business Unit, AstraZeneca (in 2024, Chief Medical Officer for F2G, Ltd); interviewed Feb. 6, 2024.
21. **Rajeshwari Sinha** [CSE Report], Programme Officer, Food Safety and Toxins Programme, CSE (in 2024, Programme Manager, Antibiotics and AMR, Sustainable Food Systems Unit, CSE); interviewed Sept. 21, 2023 and May 9, 2024.
22. **Alexander Trees** [O'Neill report], Life peer in UK House of Lords; interviewed Mar. 5, 2023.
23. One off-the-record interview, which I conducted because the interview participant had unique insights to offer but felt their current work in the space would not enable them to speak freely on the record.

Appendix E. Example Interview Materials

Recruitment Request Email Template

Tailored subject line: Inquiry: Research interview about [relevant report/keywords]

Dear [Name],

[Tailored introduction sentence as appropriate, i.e., attention-getting hook about the anchor text and/or their work in AMR].

Would you be willing to speak with me over Zoom sometime in the coming [Date range, e.g., months (Oct.-Dec.) or weeks] for an interview about your experiences as [relevant role/position]?

I'm Chris, a Canadian Fulbright researcher at the University of Washington. I'm investigating how to strengthen ties between policy and evidence. As part of my PhD dissertation, I'm compiling detailed case studies of AMR reports that sought to influence policymaking. I'm looking at reports' reception, but I'm also hoping to speak with [*description of their role*, e.g., "the teams who put them together to better understand the context, goals, and processes that led to the final public products"].

Thanks for your time and consideration.

Best regards,
Chris

Reminder Email and Pre-Interview Information Templates

Email
Hello [Name],

I'm looking forward to our interview [day, at time on Zoom].

The attached 2-page PDF briefly summarizes the research project. I'm also happy to answer any questions or provide additional info before or during our conversation.

Thanks for your time and speak soon,
Chris

Attachment (as a two-page PDF)

> **INTERVIEW: Antimicrobial resistance & communication for policy**
> *On: [Weekday, date, year] at, [time] [interviewee's time zone]*
>
> This in-depth research interview will be used as part of a PhD project conducting case studies of reports on antimicrobial resistance.

Interview goals

- Hear about your experiences as [role], with a particular focus on [any relevant focus areas]
- Reflect on goals and lessons learned from [relevant report process]
- There are no right or wrong answers – this interview is solely about your personal experiences and perspectives, focusing on aspects not already covered in existing media interviews, writings, presentations, etc.

Details

Zoom link: [Link]

- Interview will be recorded for notetaking purposes.
- Interview data will **not be anonymized**, meaning your comments can be quoted and attributed to you in the dissertation and/or related research papers (i.e., **on the record**)
- However, if there is any information you wish to share - but *not* have attributed to you – it can be noted as anonymous (i.e., **off the record**)
- You will be able to review preliminary findings, make suggestions, and/or request changes

PhD project

Who: This research is being conducted by Chris Ackerley, a Fulbright doctoral candidate in the University of Washington's interdisciplinary PhD program, focusing on science communication and evidence use in health policy contexts.

What: Qualitative, in-depth case studies of reports on AMR created for policy audiences, each including: A) interviews with report authors, B) rhetorical analysis of the report text, C) analysis of auxiliary texts from the report dissemination and reception, and D) interviews with report readers, to investigate links between the reports' creation and reception.

Why: The gap what is known through research and what is done in policymaking is a consequential and persistent problem across fields and policy domains. Thousands of documents are published each year aiming to inform policy action. Yet, much relevant scientific research seems to go unused by policymakers, prompting numerous calls for better and different multi-sector communication efforts to improve policy decision-making, design, and ultimately outcomes.

This project asks what it means to improve the communication of research evidence for policy, focused specifically on reports about AMR policymaking. The research explores processes of creating and using communications to affect policy on AMR, to learn from past initiatives and improve future efforts.

Where: Currently, case studies include the *Review on AMR* (2016, UK), the Centre for Science & Environment's *Strategic and Operational Guidance* document (2017, India), and the Interagency Coordination Group's *No time to wait* report to the UN (2019, international) – although these are subject to change.

When: Interviews and data collection will be completed by December 2024. Dissertation will be defended and published by June 2025. Related academic journal article(s) may be published throughout 2024-25.

Links & preparatory research

To make the best use of the interview, extensive pre-reading has informed tailored questions. In addition to the review itself, select sources reviewed before the interview include (but are not limited to):

- [List of resources read in advance, with hyperlinks]
- [If the list is long, links are grouped into categories for easier scanning, e.g. Media articles, presentations and panels, academic citations, commentary & critiques, professional/individual bio pages and writing]

Interview Guides

All interview guides were tailored by participant, based on pre-interview research about their biography and prior comments and writing relevant the case studies.

All interviews included an opening segment to introduce myself, briefly recap the aims of the interview, build rapport, get verbal consent for recording and on-the-record quotes (i.e., non-anonymous, attributed), and answer any questions the interviewee might have.

These guides represent the starting place for adaptation based on preparatory research.

Authors

1. To begin, can you tell me a bit about how you first got involved in [case/anchor text project]?
    - *probes as needed: clarify did you apply/were you approached? If applied, why? If approached, what made you say yes?*
2. From your perspective, what were the goals of [anchor text]?
    - *Probes/alternative phrasings: What did you hope the report would achieve? What did you hope the report would be able to accomplish?*
3. Can you walk me through your key steps in the review process what the process to get to the final report, from very early days of pulling together the team, to the final dissemination?
    - *[Open-ended "grand tour" question to see what the interviewees felt was most important to mention initially, before following up with specifics. If they answered a specific question from #4 here, I would check it off and not ask the question below].*
4. Now, I'd like to follow up clarify my understanding on some of the points you shared, and ask about some additional aspects of the process:
    - *[Audience] Can you tell me a bit more about who you pictured as the audience or audiences for the report? (& why?)*
        - *Did the team talk about who the report was intended for?*
        - *What's your sense of what [audience] wants in a report (and why)?*
        - *How did you want readers to feel coming away from the report?*
    - *How did you want the review team to come across to readers?*
    - *[Invention] How did you/the team decide what to include and exclude from the final report?*
        - *I see lots of people were involved — what did the collaboration/process look like for actually writing the words of the final report?*
    - *[Arrangement] How was the structure of the report decided?*
        - *How did you determine the final report length? (& elaborating on why?)*
    - *[Style] There are so many ways to convey ideas information, from formal academic writing to popular books to social media – what kind of style were you aiming for in the report and why?*

- *[Team members] Thinking of the team and who was involved in creating the [anchor text] – I see [available info], but can you tell me a bit more about who did what, and how the roles worked together?*
- *[Dissemination/delivery] When the report was done – what did the process for sharing it involve?*
  - *What did your involvement look like in sharing?*
  - *How were the interim reports shared? What kind of feedback did you get?*
- *[Constraints] What was the timeframe for the project? How was the project resourced/budgeted? Did those elements affect the process in any ways?*

5. Reflecting back on goals, do you feel the review achieved the goals you shared earlier? (rephrase as appropriate)
   - Did it achieve what you hoped? (why / why not)
   - Can you tell me more about why you feel that way?
   - Did goals evolve throughout the project?
6. Thinking about advice and lessons learned -
   - If you were doing the review again, is there anything you might have done differently?
     - How did you overcome those challenges?
     - What else?
   - What advice would you have to others doing similar reviews intended to influence and inform policy action?
   - What do you think — if anything — is important when communicating with policymakers?
7. *[Time allowing, specific questions about points in the report text and/or comments made in pre-interview preparatory research]*

Closing questions (same for all interviews)

8. We're winding up now – If I were to talk with any other members of the team who would you suggest based on the questions I asked (& why?)
9. Now that you've heard all my questions, is there anything else you'd like to add?
   - Is there anything you think is important I've missed asking about the process or your experience?
   - Anything you'd like to reflect more on?
10. Would you be open to me staying in touch contacting you again, potentially with follow up questions and to share preliminary results?

Contributors

1. Do you remember how you first became aware of [anchor text(s)]?
   - *You're acknowledged as a contributor - What did your involvement look like?*
2. *How would you describe* [anchor text(s)] *impact?*
3. Is there anything you think should have been done differently with [anchor text]?
   - *Tell me more / why do you say that?*

4. I've pulled together specific some things you've said about [anchor text] – *and I wanted to follow up on some particular comments [discuss comments at the time, or publicly available]*

+ Closing questions

Policymakers

1. Thinking back – do you recall how you first became aware of [anchor text(s)]*?*
    - *What was your awareness of AMR like before that?*
2. As I mentioned, my case study is looking [anchor text(s)] in detail, and I reached out because [reason(s), e.g., you've referenced, been involved in many debates where it's come up]. — *So, I wanted to follow up on some particular comments [discuss comments at the time, or publicly available]*
3. Thinking more generally about how you get information about policy issues – what formats or types of documents do you see most often?
    - *Potential probes include:*
        - *How many reports would you see in a typical week? Month?*
        - *How do you approach reading them?*
        - *Is there a difference between things created within Government vs. from an independent review process?*
        - *What informs the info sources you trust? Find credible?*

    + Closing questions

Member check email template

Dear [Name]

Thanks for speaking with me in [Month, Year] about [AMR reports and communication/the specific report] for my doctoral dissertation project.

Below is a high-level summary of the project and its primary findings. Information from your interview contributed to the findings overall.

I've included the direct quotations used from our conversation in **green**, under the summary.

If you have any comments or clarifications regarding the direct quotes, please let me know by March 31. I'm also happy to answer any questions or elaborate on any details of the project.

Thanks again for your time and insights — I really appreciate your contribution to this research,

Best,
Chris

Member check email template ***continued***

Research project summary

Thousands of reports are published annually to inform policy, yet much relevant evidence remains unused, prompting calls for better communication.

Using a qualitative, **multiple case study of three reports** (the UK *Review on AMR,* the Centre for Science and Environment's *Strategic and Operational Guidance*, and the Interagency Coordination Group on AMR's *No Time to Wait*), this research project examined how reports are created and used to inform and influence AMR policy. It aimed to learn from past efforts to improve future report writing.

Primary findings (3 sections)

Section 1: Intermediaries can use rhetorical strategies to bolster credibility

- ***Background*:** Intermediaries are defined here as individuals, teams, or organizations that serve as go-betweens for at least two groups for mutual benefit. This study focused on intermediaries facilitating evidence use between research producers and policymakers. While such intermediaries might be well-established experts in their own area(s), when serving in an intermediary role, they must establish credibility across multiple stakeholder communities. Despite their importance, little research has explored how intermediaries build credibility and persuade audiences. This chapter integrates theories of rhetorical *ethos* with expertise studies to analyze credibility-building strategies.
    - *Academic audience for this section:* Scholars in **rhetoric**, **expertise studies**, and interdisciplinary **evidence-informed policy** studies (e.g., readers of *Evidence & Policy*).
- ***Findings:*** Intermediaries must exhibit credible "interactional expertise"— i.e., mastery of expert language without hands-on experience. Two strategies to do so are:
    - **Perform an "extended invention process"** — i.e., showcase ways they learned over time and actively engaged with a wide variety of stakeholders.
    - **Enact and emphasize three key "virtues"** —inclusivity (welcoming many perspectives), transparency (openness and clarity), independence (impartiality and autonomy).
- ***Practical implications*:**
    - Those writing policy reports in areas outside their expertise and/or those synthesizing multiple perspectives should emphasize their learning process, active stakeholder engagement, and commitment to inclusivity, transparency, and independence.

Section 2: To support agenda-setting, written reports can integrate insights from rhetoric and public policy studies.

- ***Background:*** Public policy theories like the Multiple Streams Framework explain how issues gain attention, but offer little guidance on persuasive communication. Rhetorical theory provides a complementary lens.

    - *Academic audience for this section:* Scholars in fields of **rhetoric** and **public policy.**
- ***Findings*:** Three rhetorical strategies can contribute to reports' agenda-setting success:
    - **Argue urgency, then possibility** — Reports that first argue for an issue's urgency and then argue that solutions are possible can help raise the issue on the political agenda by balancing the motivation of crisis with political feasibility and optimism.
    - **Appeal to momentum** — Reports can strategically highlight moments of increased political attention to an issue, which relate to concepts of rhetorical *kairos* (i.e., opportune timing) and policy windows from the Multiple Streams Framework.
    - **Strategic repetition and enumeration** — Reports can use numbered lists, repeated headings, and structured recommendations to amplify key messages.
- ***Practical implications*:**
    - Structuring a report's overall arguments using an urgency-possibility sequencing, highlighting moments of policy momentum, and using strategic repetition with numbered lists can enhance a report's persuasiveness for agenda-setting purposes.

Section 3: Reports function not merely as persuasive tools in the moment but as enduring rhetorical resources that equip readers with information, citations, and landmarks to use for subsequent policy discourse.

- ***Background***: Reports aim to raise awareness and spark action upon publication, but much of their impact depends on their ongoing use in subsequent writing and debates. Observing report circulation over 5+ years, this section proposes three ways reports can provide long-term value and offers rhetorical heuristics (i.e., systematic sets of questions or lines of inquiry that help guide creative processes) for report writers.
    - *Academic audience for this section:* Scholars in **rhetoric**, **technical communication,** and **writing studies**.
- ***Findings:***
    - **Fill a vacant niche** — Writers should identify and address a gap in the policy discourse to ensure the report provides valuable, new rhetorical resources.
    - **Leverage resource-source congruence** — Writers should align report content with the credibility and *ethos* of its authors to maximize its utility as a persuasive citation.
    - **Construct a milestone marker** — Writers should position the report as a reference point or "landmark," helping subsequent champions navigate the policy landscape and create coherent policy narratives of progress to date and future directions.
- ***Practical implications:***
    - By applying these heuristics, report authors can enhance their documents' longevity and influence as tools for *others* to use in ongoing policy discourse.

<u>Direct quotes from your interview appearing in the dissertation</u>:

1. [Any direct quotes from their interview used in the dissertation, in a numbered list]

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