

RESEARCH ARTICLE

# The Moral of the Story: Contesting Narratives at the Nexus of Science and Policy During COVID-19

Carolyn Hughes Tuohy

Political Science, University of Toronto  
Email: [c.tuohy@utoronto.ca](mailto:c.tuohy@utoronto.ca)

## Abstract

*Using the case of the Scientific Advisory Group for Emergencies in the United Kingdom as illustration, this essay offers a framework for understanding the role of narratives and competition among narratives in mediating the relationships between scientific advisers and policy-makers during the COVID-19 pandemic. Throughout the pandemic, competing judgments about scientific independence and democratic accountability, about the risks of action and inaction, and about the appropriate balance of costs and benefits to society as a whole and to subgroups of the population were filtered through the narrative perspectives of different discourse coalitions. This narrativization of the process had both positive and negative effects. On the one hand, it provided common platforms for the integration of disparate types of knowledge relevant to policymaking. On the other hand, narratives provided platforms for rival coalitions in ongoing contests that left unresolved the central normative questions of distributional fairness and democratic accountability.*

**Keywords:** narrative in the policy process; science advice for policy; Scientific Advisory Group for Emergencies; COVID-19

## Introduction

Policymaking in the time of COVID-19 meant making trade-offs across fundamental values in the context of roiling uncertainty, urgency, and high stakes as the disease coursed through populations. It meant weighing the costs and benefits of different potential policy responses, when the incidence of those costs and benefits fell unevenly across the population. It also meant weighing the risks of inaction against the risks of action. In this context, policymakers cross-nationally turned to scientific experts for advice on how to understand and respond to the threat. In so doing, they triggered yet further value-laden questions of democratic accountability. If governments “followed the science,”

did that amount to ordaining scientists themselves as policymakers? If so, how and to whom were scientists to be held accountable?

This essay offers a framework for understanding the role of narratives and competition among narratives in mediating the relationships between scientific advisers and policymakers during the COVID-19 pandemic. Narratives shaped the evolution of both the process and the substance of science advice. On the one hand, they facilitated discourse between scientists and policymakers. On the other hand, they provided platforms for rival coalitions in ongoing contests that left unresolved the central normative questions of distributional fairness and democratic accountability.

The term “narrative” is widely used and much abused in popular discussions of the policy process. It is often used as synonymous with “rationale” or “theme,” but if we are to understand the power of narrative in the policy process, we need to take the concept more seriously and think more deeply about what narratives are and what gives them their power. As a distinctive mode of discourse, a narrative takes the form of a story that engages the imagination by appealing to aspects of lived experience in a particular setting. It has a story-telling arc or plot with a beginning, middle, and end in which tension variously builds, crests, and subsides over a series of events or happenings. It is populated by characters who experience events and who drive the action through the way they respond to those events. It is told from a particular perspective that highlights certain features of the action and certain characters and suppresses others. Importantly, in many cases, the narrative has a moral or lesson to be drawn from the experience of the characters. In each of these respects a narrative is a selective rendering; it highlights certain aspects of the setting, certain sequences of events, and certain characters and it provides a particular interpretation of their interaction. By presenting what matters in a given context and what does not, it is inherently value-based.

These elements of the narrative form give it a distinctive power. Narratives appeal to both the intellect and the emotions. There is a “narrative logic” through which the audience is meant to understand *why* the plot unfolds as it does. Because the plot is driven by the actions of characters with emotions and motives, the audience is asked to make an imaginative leap into the experience of the characters and to feel empathy with at least some of them, seeing the action from their perspective. The narrative form has therefore been described as “dialectical synthesis” of two rhetorical strands: “the argumentative, persuasive theme and the literary, aesthetic theme.”<sup>1</sup>

In the policy process, this combination of qualities means that narratives can and do play both an epistemological and a political role. Epistemologically, narratives have the unique potential to forge an important bridge between logical-scientific, systematic modes of understanding and the ad hoc unsystematic observations of everyday life that form the stuff of much policy

<sup>1</sup> Walter R. Fisher, “Narration as a Human Communication Paradigm: The Case of Public Moral Argument,” *Communication Monographs* 51, no. 1 (1984): 1–22.

consideration.<sup>2</sup> Systematic investigation involves, to the extent possible, the modeling of causal relationships and the testing of falsifiable hypotheses with empirical data. “Ordinary knowledge,” in contrast, relies not on logical proof, but rather on its resonance with practical experience and its acceptance through social interaction.

Both everyday and systematic approaches to knowledge have weaknesses and strengths in the policy process. Everyday knowledge incorporates biases,<sup>3</sup> while scientific inquiry can hold policy development hostage to the quest for yet further refinement and certainty.<sup>4</sup> What is needed in the policy process are what Sheila Jasanoff calls “serviceable truths,” which are bits of knowledge that are scientifically “true” in that they result from inquiry based on scientific methods and “satisf[y] tests of scientific acceptability.”<sup>5</sup> They are primarily aimed not at furthering scientific understanding per se, but rather at offering a “serviceable” basis for reasoned decision-making about timely action in the face of remaining uncertainty, as the process of scientific inquiry continues. Serviceable truths, in short, are scientifically “good enough” to chart a course for policymaking in complex circumstances. The early models of the projected spread of the coronavirus SARS-Cov-2, which causes COVID-19, were serviceable truths. They were scientifically “true” in the sense that they were products of the scientific method, based on epidemiological theory, mathematical techniques, and preliminary data and would be subject to ongoing revision. At each stage, they were serviceable in providing a platform of understanding for decision-making—first, by conveying the concept of exponential growth and, then, by projecting the effects of various public health interventions.

As for their political role, shared narratives can provide vehicles for the formation of “discourse coalitions.” Unlike “advocacy coalitions” of actors who share more or less organized systems of belief about “basic values, causal assumptions, and problem perceptions,”<sup>6</sup> discourse coalitions form around “storylines” that give meaning to experience in ways that “actors from widely differing backgrounds [can] relate to *without necessarily understanding each other exactly*.”<sup>7</sup> Narratives can build and bind coalitions, but because they can be told from different perspectives, they also serve to divide coalitions from each other in a dynamic of narrative competition.

Narratives played key roles in mediating the provision of serviceable truths during the COVID-19 pandemic and, in the process, gave rise to competing

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<sup>2</sup> Allen Schick, “Informed Legislation: Policy Research versus Ordinary Knowledge,” in *Knowledge, Power, and the Congress*, ed. William Robinson and Clay Wellborn (Washington, DC: Congressional Quarterly Press, 1991), 99–119; Mark A. Emmert, “Ordinary Knowing and Policy Science: Making Ends Meet,” *Knowledge* 7, no 1 (1985): 97–112.

<sup>3</sup> Daniel Kahneman, *Thinking, Fast and Slow* (New York: Farrar, Straus and Giroux, 2011).

<sup>4</sup> Sheila Jasanoff, “Serviceable Truths: Science for Action in Law and Policy,” *Texas Law Review* 93 (2015): 1723–49.

<sup>5</sup> Jasanoff, “Serviceable Truths,” 1727.

<sup>6</sup> Paul A. Sabatier, “An Advocacy Coalition Framework of Policy Change and the Role of Policy-Oriented Learning Therein,” *Policy Sciences* 21, nos. 2–3 (1988): 139.

<sup>7</sup> Maarten Hajer and David Laws, “Ordering through Discourse,” in *The Oxford Handbook of Public Policy*, ed. Michael Moran, Martin Rein, and Robert E. Goodin (Oxford: Oxford University Press, 2006), 260–61 (emphasis added).

discourse coalitions, each involving different sets of scientists and political actors within and outside government. In this essay I explore the broad affinities between narratives and scientific inquiry that open both the process and the substance of science advice to a narrative rendering. I then examine the role that narratives played in shaping both the content and the process of science advising in a particular case: the Scientific Advisory Group for Emergencies (SAGE) in the United Kingdom. SAGE is part of the apparatus of the Cabinet Office and is convened at the call of the Government Chief Science Officer (GCSO) response to emergencies such as a pandemic. It is populated by scientific experts from within and outside government as relevant to the emergency at hand and is formally a subcommittee of a committee of cabinet ministers (the Civil Contingencies Committee). Although the formal structure of SAGE is well-established, most of its membership is newly assembled on the occasions on which it is needed, so common understandings need to be developed. Prior to the COVID-19 experience, SAGE had been mobilized on eight occasions, but typically met five or fewer times in each case.<sup>8</sup> The extensive and high-profile process that would ensue during COVID-19—involving 105 meetings of SAGE plus multiple meetings of its subgroups by February 2022<sup>9</sup> as well as numerous press conferences by its chair—was uncharted territory for both policymakers and scientific advisors and they struggled to find their bearings. This process distilled down to a central set of “insider” government officials and scientists who were consistently and intensively involved as well as concentric circles of others whose participation was more episodic and peripheral.<sup>10</sup>

Narratives performed two functions in the case of SAGE during the COVID-19 pandemic. First, narratives played a “constitutive” role, shaping expectations among participants and more broadly about the process of science advising. What did it mean for governments to “follow the science”? To whom are scientists ultimately accountable for the advice they offer? Three contesting narrative arcs emerged, depicting the process as a “quest” for truth, as a “venture” in accomplishing a public project, and as a “crusade” toward delivering a public good. Each of these narratives had different implications for the understanding of scientific independence and lines of scientific accountability, and hence for the legitimacy of the endeavor of scientific advising and of the advice that resulted.

<sup>8</sup> The exceptions were during the H1N1 flu emergency in 2009 (twenty-five meetings) and the Fukushima nuclear disaster in 2011 (ten meetings). Tom Sasse, Catherine Haddon, and Alex Nice, *Science Advice in a Crisis* (London: Institute for Government, December 2020), 30, [https://www.instituteforgovernment.org.uk/sites/default/files/publications/science-advice-crisis\\_0.pdf](https://www.instituteforgovernment.org.uk/sites/default/files/publications/science-advice-crisis_0.pdf).

<sup>9</sup> “SAGE Meetings, February 2022,” gov.uk, <https://www.gov.uk/government/collections/sage-meetings-february-2022>.

<sup>10</sup> See Hannah Baker et al., “COVID-19 and Science Advice on the ‘Grand Stage’: The Metadata and Linguistic Choices in a Scientific Advisory Groups’ Meeting Minutes,” *Humanities and Social Sciences Communications* 9 (2022): 1–16, <https://www.nature.com/articles/s41599-022-01403-1>; Paul Cairney and Federico Toth, “The Politics of COVID-19 Experts: Comparing Winners and Losers in Italy and the U.K.,” *Policy and Society* 42, no. 3 (2023): 392–405.

Second, narratives performed a “heuristic” function, shaping the conduct of inquiry itself. As an aid to the process of scientific discovery, a narrative provides a “cognitive strategy” for making sense of experience.<sup>11</sup> It looks for prior events that are either analogous or causally precedent to an event in question in a temporal sequence. The temporal plot of the narrative builds the present setting into a plausible story of the past and projects it forward into an uncertain future. Moreover, a narrative is “open-ended,” providing “explanations that are convincing enough to be accepted as true, [while recognizing] that there could be alternative accounts which tell a different but equally persuasive story.”<sup>12</sup> In the COVID-19 pandemic, scientific models were based on assumptions about the behavior of the virus and of its human hosts and potential hosts. Under the circumstances of great uncertainty that prevailed during the pandemic and were especially acute at the outset, many of these assumptions were drawn from the unsystematic “ordinary knowledge” and intuition of the participants (both scientists and policymakers) as conveyed through narratives.

In short, constitutive narratives about the role of science conditioned expectations about science-policy relationships and heuristic narratives conditioned the content of scientific advice. Each faced tests of plausibility, though, as the pandemic wore on. As discourse coalitions formed around different storylines and actors within and outside government aligned with one or the other, both scientific and political disputes became narrativized. The overall effect was increasingly to exacerbate the contention and to call the legitimacy of the process itself into question.

Exploring the role of narrative in this regard in the science-advising process during the COVID-19 pandemic can highlight aspects of that process, in particular, the ways in which it was suffused with value orientations toward the meaning of democratic accountability and toward distributional outcomes that might otherwise remain subliminal. This presentation, while neither systematic nor exhaustive, is meant to offer new ways of thinking about the role of science in the policy process and to suggest avenues for further investigation.

### **Narrative affinities in scientific inquiry and implications for the science-advising process**

If a narrative bridge is to be forged between systematic and ordinary modes of understanding and discourse, it must find footings in both. These footings may be more readily apparent in the realm of ordinary knowledge. Everyday discourse is awash in narratives that form the stuff of much social interaction.<sup>13</sup> Anthropologists consider some narrative forms such as myths and legends to be “human

<sup>11</sup> John A. Robinson and Linda Hawpe, “Narrative Thinking as a Heuristic Process,” in *Narrative Psychology: The Storied Nature of Human Conduct*, ed. Theodore R. Sarbin (Westport, CT: Praeger, 1986), 111–25.

<sup>12</sup> Robinson and Hawpe, “Narrative Thinking as a Heuristic Process,” 115.

<sup>13</sup> Robert J. Shiller, *Narrative Economics: How Stories Go Viral and Drive Major Economic Events* (Princeton, NJ: Princeton University Press, 2019).

universals.”<sup>14</sup> A narrative platform within scientific understanding is not so immediately apparent. Nonetheless, there are narrative-like aspects to at least some phases and types of scientific inquiry that mean that both the process and results of scientific inquiry can be presented in narrative terms that connect to ordinary knowledge. Conversely, narratives can present a logic of events and experience that can suggest hypotheses to be tested systematically.

Let us consider the three central elements of narrative—plot, character, and perspective<sup>15</sup>—as they relate to the power of narratives in the science-advising process.

### Plot

Both scientific models and narrative plots provide a way of ordering phenomena that may otherwise appear as incomprehensible messes of data points or happenings. Whereas models seek to abstract from experience, control for context, and recombine elements in systematic relationships, narratives select and relate aspects of experience without abstracting them from their context. Indeed, context or “setting” is an essential feature of a narrative plot. This can lead to a criticism of narrative as “logically formless” and therefore unsuited to explanation, in that “the explanandum will be non-detachable from the supporting narrative.”<sup>16</sup> However, this criticism neglects the fundamental capacity of narrative to offer a *plausible* rendering of the dynamics of a situation and the unfolding of events. Because different narratives can be offered about the same course of events, narratives can also compete against each other and that competition can test their relative plausibility. In another context, this adversarial testing of different narrative renderings of events is a familiar, central feature of the establishment of “facts” in legal proceedings.

Narrative plots differ in sweep across time and place, from comprehensive multigenerational epics to intimate vignettes or anecdotes that only hint at what came before and what will follow.<sup>17</sup> They also differ in motif: classically, for example, a “romance” follows the progress of the hero(es) to a goal, through obstacles and crises that are progressively overcome, while a “tragedy” sees the hero(es) defeated through vanquishment, capture, or corruption. Similar arcs can be found in the policy process, as in Deborah Stone’s identification of “stories

<sup>14</sup> Donald E. Brown, “Human Universals, Human Nature & Human Culture,” *Daedalus* 133, no. 4 (2004): 47–54.

<sup>15</sup> Elizabeth Shanahan and her coauthors identify setting, plot, character, and moral (or “point”) to be the essential features of policy narratives. I treat setting as part of the plot here and deal below with moral as an emergent characteristic. Elizabeth A. Shanahan et al., “The Narrative Policy Framework,” in *Theories of the Policy Process*, ed. Christopher M. Weible and Paul A. Sabatier, 4th ed. (New York: Westview Press, 2017), 173–213.

<sup>16</sup> Paul A. Roth, “Essentially Narrative Explanations,” *Studies in History and Philosophy of Science* 62 (2017): 42.

<sup>17</sup> Carolyn Hughes Tuohy, “Welfare State Eras, Policy Narratives, and the Role of Expertise: The Case of the Affordable Care Act in Historical and Comparative Perspective,” *Journal of Health Politics, Policy and Law* 43, no. 3 (2018): 427–53.

of rising” and “stories of decline” and in Riikka Kuusisto’s treatment of tragedy, romance, comedy, and satire as frames for theories of international relations.<sup>18</sup>

Whatever its scope and scale, the temporal *plot* of a narrative has a beginning, middle, and end. It has a “narrative logic,” a sequence of events or actions in which one thing leads to another in a particular place and time.<sup>19</sup> This is a much looser form of causality than that of the systematic logic of a scientific specification of conditions that will always and everywhere yield the same result, but it is nonetheless “reason-structured.”<sup>20</sup> Indeed, the particularity of a narrative can both illustrate and inform scientific reasoning. Although much scientific inquiry proceeds deductively from models, other questions, especially those directed to natural phenomena or human behavior, can benefit from a more inductive method, developing research questions and foci of inquiry by getting a sense of the setting in which the problem occurs. It is this sense of “what is going on here”<sup>21</sup> that points up the variables of interest, by highlighting anomalies that present puzzles to be resolved or by directing attention to certain variables that “matter” more than others. The structure of a narrative is well-suited to this orientation phase of inquiry. Because it does not demand the tight specification of a model, it is also open to different perspectives on the setting of the problem to assess the plausibility of each, which is an epistemological strength, but a political vulnerability.

### Characters

Although the temporality and particularity of a narrative plot can frame a sequence of developments and orient the investigator to the setting, without the motivated agents (characters) who drive the plot we have only a thin and partial narrative. Characters are necessary both to provide the full logic of the “reason-structured” plot and to forge an empathetic connection. Narratives are populated by characters with agency and motives, whose choices and actions drive the plot. Not all types of scientific inquiry lend themselves to this sort of characterization. The human sciences, however, rely for their explanations on paradigmatic characters, with distinctive motivations and propensities for action that can be represented in heuristic narratives in the building and communication of analytic models. Economics is a quintessential example.

Mary Morgan brilliantly characterizes economic models as artificial “worlds,” populated by characters whose interactions drive the unfolding of events, into which both experts and non-experts can imagine themselves.<sup>22</sup> She traces the

<sup>18</sup> Deborah Stone, *Policy Paradox and Political Reason* (Glenview, IL: Scott Foresman, 1988), 160–68; Riikka Kuusisto, “Comparing IR Plots: Dismal Tragedies, Exuberant Romances, Hopeful Comedies, and Cynical Satires,” *International Politics* 55 (2018): 160–76.

<sup>19</sup> Jonathan Culler, “Logic of Narrative,” in *Routledge Encyclopedia of Narrative Theory*, ed. David Herman, Manfred Jahn, and Marie-Laure Ryan (London: Routledge, 2010), 279; Brian Richardson, “Causality,” in *Routledge Encyclopedia of Narrative Theory*, ed. Herman, Jahn, and Ryan, 50.

<sup>20</sup> Cheryl Misak, “Experience, Narrative, and Ethical Deliberation,” *Ethics* 118, no. 4 (2008): 614–32.

<sup>21</sup> John Kay and Mervyn King, *Radical Uncertainty: Decision-Making Beyond the Numbers* (New York: Norton, 2020).

<sup>22</sup> Mary S. Morgan, *The World in the Model* (Cambridge: Cambridge University Press, 2012).

evolution of the paradigmatic “economic man” in economic theory from the one-dimensional, rational utility-maximizer of the nineteenth century—with only the arguments in the utility function shifting in different models—to the fleshing out of these highly stylized characters over the course of the twentieth century. In the latter phase, with the advent of behavioral economics, the paradigmatic type “is becoming a more rounded and more interesting ‘fatter’ character—a man who can learn, bargain, act strategically, has memory, and may even be happy.”<sup>23</sup>

Analogously, epidemiological models classically portray thinly sketched unidimensional characters. The simplest models are populated by three character types in the so-called S-I-R model: the susceptible, the infectious, and the removed (through recovery or death). In subsequent elaborations, the population of characters has grown as subtypes are recognized: for example, the exposed, the diagnosed, the ailing, the recovered, and the dead.<sup>24</sup> As in the case of the characters in economic models, these paradigmatic characters inform the assumptions on which the dynamics of the model are based.

There is also a sense in which investigators themselves are unavoidably characters in their presentation of results and thus play roles in the constitutive narratives of the science-advising process. In presenting their own process of discovery and their findings, they are implicitly asking for their audience to trust that they are describing the process in a way that can be replicated and that the findings did occur. In this process, investigators present themselves as trustworthy characters or “good guys.”<sup>25</sup> Competing discourse coalitions, however, may cast the same characters in different roles, with different, less trustworthy motives.

### Perspective

As we shall see in the case of COVID-19, narratives proved to be double-edged swords, as they invited counternarratives<sup>26</sup> from within and outside the ranks of scientists. Contesting narratives provided plots with different interpretations of past, present, and future events, with the heroes of one narrative becoming villains or victims in another.

The possibility of counternarratives derives from a third characteristic of the form, namely, the perspective that is brought to bear. In a narrative, events are related from a perspective or perspectives of an omniscient narrator or of one or

<sup>23</sup> Morgan, *The World in the Model*, 166.

<sup>24</sup> Henri Berestycki, “Epidemiology Modelling with Diffusion and the COVID-19 Pandemic,” June 15, 2021, Fields Institute for Mathematical Sciences, Toronto, YouTube video, <https://www.youtube.com/watch?v=c-07xXbpHxU>.

<sup>25</sup> Rom Harré, “Some Narrative Conventions of Scientific Discourse,” in *Narrative in Culture: The Uses of Storytelling in the Sciences, Philosophy, and Literature*, ed. Christopher Nash (London: Routledge, 1990), 83–84.

<sup>26</sup> I use the term “counternarratives” to mean narratives that play off other narratives, recognizing the same happenings but imputing different motives to the characters and hence different plot lines.



more of the characters; the telling will reflect their subjective worldviews and belief systems.<sup>27</sup>

### The moral of the story: Narratives as vehicles for values

Because narratives relate the actions of characters with motives, they may also have an implicit or explicit value-laden “moral” about good or bad objectives and/or worthy or unworthy ethics of behavior. This aspect of narrative is particularly important in the science-advising process, both with regard to the content of advice and with regard to the process itself. By its very nature, science advice for policymaking is aimed at providing valid information that can serve as a platform for decisions about courses of government action. When science is brought to bear on decisions about actions that will affect the public realm, it cannot be divorced from those consequences. It is in that sense “inherently political.”<sup>28</sup> The advice will have a “point,” a future direction in which it leads, and the moral of a narrative can provide a vehicle for delivering that point, with distributive implications as to who will benefit and who will suffer from the resulting policies.

Narratives of the future are especially powerful in providing an orientation in the context of uncertainty and, in turn, they embed risks of “type 1” and “type 2” errors. They may imply accepting a finding as true when it is in fact false, which is a “false positive” or type 1 error, or rejecting a finding when it is in fact true, which is a “false negative” or type 2 error. Making these judgments in the policy process entails further distributional considerations of who is likely to bear the costs of these risks. How “precautionary” should we be and how much should that depend on who bears the risk? In the case of risks such as those posed by pandemics, moreover, the costs of risks are at least in part externalized by individuals, in the sense that private actions have public consequences. Judgments about the acceptability of risks thus inevitably evoke deeper orientations grounded in beliefs about individualism versus communitarianism and egalitarianism versus stratification in distributional outcomes.<sup>29</sup> During the COVID-19 pandemic, decisions about when to escalate or relax the severity of public health measures were informed by science advice based on scenarios and models that embedded assumptions about viral and social behavior drawn from narrative frames. Both models and narratives present a selective, distilled picture of reality, highlighting some types of developments and some incidences of the effects of those developments and ignoring others. Given the unevenness with which the risks of the pandemic fell across the population, these inclusions and exclusions had profound distributional implications.

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<sup>27</sup> Carola Surkamp, “Perspective,” in *Routledge Encyclopedia of Narrative Theory*, ed. Herman, Jahn, and Ryan.

<sup>28</sup> Heather Douglas, “Politics and Science: Untangling Values, Ideologies, and Reasons,” *Annals of the American Academy of Political and Social Science* 658 (2015): 297.

<sup>29</sup> Mary Douglas and Aaron Wildavsky, *Risk and Culture: An Essay on the Selection of Technological and Environmental Dangers* (Berkeley, CA: University of California Press, 1982).

In addition to shaping the content of science advice, narratives can buttress the institutional scaffolding of the science-advising process itself, by providing a moral of fidelity to a mission that constitutes a collective ethic of behavior.<sup>30</sup> These institutional narratives differ from formal rules that can be enforced by third parties regardless of what the actors would want to do on their own; they instead convey an internalized ethic that governs behavior as a matter of conviction or persuasion. In the case of SAGE during the COVID-19 pandemic, narratives variously portraying science advising as a “quest” for truth, a “venture” in the accomplishment of a collective project, or a “crusade” for the public good contested with each other. In that narrative competition, the balance of these motifs varied and shifted over time.

## Heuristic and constitutive narratives in the science-advising process

### *Heuristic narratives: The world in the model*

In the context of the “severe and multifaceted” uncertainty that characterized the early months of the COVID-19 pandemic,<sup>31</sup> heuristic narratives guided the process of inquiry into the course of the disease and the likely impact of different policy responses. At the outset, scientists and policymakers reached for past analogies. Narratives of the unfolding of past epidemics and of the contemporary experience of other nations in which the COVID-19 pandemic was further advanced were shared and contested as scientists and decision-makers struggled to make sense of the phenomenon. Was SARS-COV-2 like its predecessor SARS-COV-1, which spread largely in health-care settings, a narrative that one SAGE member attributed to U.K. government officials, but that SAGE itself cautioned against?<sup>32</sup> Was it, instead, like influenza, which spreads widely in community settings, the narrative that guided the early deliberations of SAGE itself and formed the basis for the development of “reasonable worst-case scenarios,” as discussed below?<sup>33</sup>

The development of mathematical models was the tool of choice in the U.K. and cross-nationally. However, models based on the estimation of equations from empirical data to predict the course of the disease were stymied at the outset in Britain, before testing and tracing of sufficiently large populations to

<sup>30</sup> Carolyn Hughes Tuohy, “Anniversary Narratives of the Health Care State: Institutional Entrenchment in Retrospect,” *Journal of Health Politics, Policy and Law* 48, no. 2 (2023): 269–98.

<sup>31</sup> Richard Bradley and Joe Roussos, “Following the Science: Pandemic Policy Making and Reasonable Worst-Case Scenarios,” *London School of Economics Public Policy Review* 1, no. 4 (2021): 1–7.

<sup>32</sup> Albert Evans, “Sage Member Sir Ian Boyd Says If U.K. Lockdown Had Started a ‘Week or Two Weeks Earlier’ It Could Have Reduced Coronavirus Deaths,” *iNews*, May 22, 2020 (updated July 13, 2020), <https://inews.co.uk/news/sage-sir-ian-boyd-uk-lockdown-coronavirus-start-date-deaths-430283>.

<sup>33</sup> Mićo Tatalović, “What We’ve Learnt from Sage Meeting Minutes So Far,” *Research Professional News*, June 1, 2020, <https://www.researchprofessionalnews.com/rr-news-uk-views-of-the-uk-2020-6-what-we-ve-learnt-from-sage-meeting-minutes-so-far/>; Paul Cairney, “COVID-19 Policy in the UK: Did the U.K. Government ‘Follow the Science’? Reflections on SAGE Meetings,” *Politics & Public Policy*, July 8, 2020, <https://paulcairney.wordpress.com/2020/07/08/covid-19-policy-in-the-uk-did-the-uk-government-follow-the-science-reflections-on-sage-meetings/>, Table 2.

identify cases and contacts had been put in place. Measurement differences made cross-national learning and comparison a fraught exercise. Data on COVID-19 deaths were the best data available, but even so, there were sharp inconsistencies with how deaths were recorded. Deaths are a lagging indicator, requiring the building of models to allow for extrapolation backward to cases, exposures, and so on. Epidemiologists could develop models *a priori* to describe the dynamics of spread, but even after the genomic sequencing of the SARS-COV-2 virus, little was known about the pathophysiology, transmission, and clinical management of the resulting disease.<sup>34</sup>

Accordingly, early modeling rested heavily on assumptions about the behavior of the virus and of populations. By fleshing out “the world in the model,” narratives were a natural epistemological vehicle for integrating and conveying these assumptions. This potential of narrative has a particular affinity with Bayesian approaches for dealing with uncertainty in scientific inquiry.<sup>35</sup> In Bayesian statistical inference a model is built using “priors” (or starting points) and adjusting those priors as data accumulate, testing the new evidence against the model for credibility and testing the model against the new evidence for predictive power. But the “priors” of a Bayesian model must come from somewhere: experience, theory, or a combination of both. “Ordinary” and systematic approaches to data-gathering and hypothesis formation can inform this process and narratives can play a key mediating role in bridging the two.

In the SAGE advisory process, narratives provided the plots of different “scenarios” and the characters with which models were populated. We begin by examining the depiction of scenarios as narrative plots.

As in other jurisdictions, SAGE modelers created various scenarios using different assumptions to project and adjust the likely course of evolution for the pandemic, with and without the adoption of various public health interventions to reduce spread through the population. Prominent among these models was a “reasonable worst-case scenario” (RWCS), projecting what would happen if case fatality rates and infectivity were in the upper range of possible levels, excluding the most extreme possibilities, and assuming limited or no adoption of public health restrictions. The “moral” to be drawn from a RWCS is “forewarned is forearmed.” Preparing for the RWCS builds an arsenal of tools that can be calibrated to less challenging developments.<sup>36</sup> Yet presenting a “worst” case can backfire if it implies a fatalistic moral of acceptance. By early March of 2020, the modelers began to pair the RWCS with an “optimistic” scenario to establish a range of possible outcomes, but the RWCS continued to galvanize attention.

At first, when data on actual cases were scant, the RWCS relied heavily on assumptions drawn from past experience, principally with influenza. Even after models could begin to incorporate the accumulating data on actual cases and

<sup>34</sup> W. Joost Wiersinga et al., “Pathophysiology, Transmission, Diagnosis, and Treatment of Coronavirus Disease 2019 (COVID-19): A Review,” *Journal of the American Medical Association* 324, no. 8 (2020): 782–93.

<sup>35</sup> Peter Abell, “Narratives, Bayesian Narratives, and Narrative Actions,” *Sociologica* 3 (2007): 1–21.

<sup>36</sup> Jonathan Birch, “Science and Policy in Extremis: The U.K.’s Initial Response to COVID-19,” *European Journal for Philosophy of Science* 11, no. 3 (2021): 15.

related variables, the advice process continued to develop the RWCS as a reference point. Narratives were both a strength and a weakness in this process. Given that the modeling assumptions could variously come from epidemiological theory, limited data, and “ordinary knowledge,” developing the RWCS was a joint endeavor of SAGE and the relevant government officials.<sup>37</sup> Within this closed process a common fatalistic narrative developed among both scientific advisers and government officials that guided decision-making in the early stages of the pandemic. Values infused this narrative, in the form of orientations to risk tolerance (that is, about how much risk to incur) and to the uneven incidence of risk-bearing within the population (that is, about who would bear the risk). It portrayed the virus as an inexorable influenza-like pathogen that would sweep through the population until a level of “herd immunity” sufficient to slow its spread was developed. In the face of this inevitability, the best that policymakers could do was to defend the health system by trying to postpone the height of the peaks of infection to the summer, while shielding those most vulnerable to severe disease and seeking to expedite the development of vaccines.<sup>38</sup> This shared narrative effectively bound the central insider participants in the science-advising process into a discourse coalition that proved resistant to other perspectives even within the close decision-making circles of cabinet government, as testimony before Select Committees of the House of Commons would later reveal.<sup>39</sup>

Outside this circle, however, the narrative of an inexorable march to herd immunity was fiercely contested. Five hundred and one British scientists were joined by forty “distinguished international signatories” to form another discourse coalition and release an open letter to the Prime Minister. In that letter, they pointed to the experience of other countries to present a different narrative, in which “under unconstrained growth, [the British] outbreak will affect millions of people in the next few weeks. This will most probably put the NHS at serious risk of not being able to cope with the flow of patients.” Expressing alarm that “[g]oing for ‘herd immunity’ at this point does not seem a viable option ... risking many more lives than necessary,” the letter urged “anyone who has sympathy with our views, and access to the government strategy group, to make our concerns more widely known.”<sup>40</sup> SAGE members, in turn, struggled to depict herd immunity as a fateful consequence rather than a deliberate goal of current policy. This contest over heuristic narratives for understanding the likely course of the pandemic would also play into a contest of “constitutive” narratives and

<sup>37</sup> Birch, “Science and Policy in Extremis,” 23.

<sup>38</sup> Paul Cairney, “The U.K. Government’s COVID-19 Policy: Assessing Evidence-Informed Policy Analysis in Real Time,” *British Politics* 16, no. 1 (2021): 95–97.

<sup>39</sup> House of Commons, Health and Social Care, and Science and Technology Committees, *Coronavirus: Lessons Learned to Date*, Sixth Report of the Health and Social Care Committee and Third Report of the Science and Technology Committee of Session 2021–22 (London: House of Commons, October 12, 2021), 32, 40–42.

<sup>40</sup> David Arrowsmith et al., “Public Request to Take Stronger Measures of Social Distancing across the U.K. with Immediate Effect,” March 14, 2020 (updated March 16, 2020), [https://webspaces.maths.qmul.ac.uk/v.nicosia/UK\\_scientists\\_statement\\_on\\_coronavirus\\_measures.pdf](https://webspaces.maths.qmul.ac.uk/v.nicosia/UK_scientists_statement_on_coronavirus_measures.pdf).

counternarratives about the science-advising process itself, as further discussed below.<sup>41</sup>

We now turn from the narrative rendering of scenario plots to the depiction of characters within epidemiological models. Narratives continued to infuse risk orientations and distributional values into the development of models even as more data became available to inform the modeling process. The paradigmatic “susceptible, infected, and removed” characters of epidemiological models had two important influences on policymaking during COVID-19. The first arose from the motives attributed to the characters through the assumptions that were made about their likely behavior in both the presence and the absence of public health restrictions. These assumptions appear to have arisen largely from the “ordinary knowledge” shared and discussed in SAGE and the U.K. Cabinet rather than from advice from behavioral scientists. SAGE did establish a subgroup of academic behavioral scientists, the Scientific Pandemic Insights Group on Behavior (SPI-B), whose membership also included the head of the government’s Behavioral Insights Team (who was also a member of SAGE). SPI-B produced a number of papers, some but not all of which were discussed at SAGE and subsequently released publicly. However, SPI-B advice focused almost entirely on communications strategies, not on the behavioral assumptions underpinning the SAGE modeling that was the remit of another subgroup, the Scientific Pandemic Insights Group on Modelling (SPI-M). To the extent that SPI-B offered comments on the likely effects of different public health interventions, alone or in combination, they were presented as “the collated expert opinions of SPI-B participants” in the absence of empirical evidence.<sup>42</sup>

One critical assumption of the early models was that their paradigmatic characters would develop “behavioral fatigue” and would cease to comply as restrictions wore on. This narrative essentially prioritized the “risks of action” in the context of uncertainty as weighed against the risks of inaction. The consequences of this assumption were serious. SAGE initially recommended that the institution of public health restrictions should be delayed as long as possible because they could not be sustained for long.

The source of the concept of behavioral fatigue is unclear. One common attribution is to the Chief Medical Officer, Chris Whitty, on the basis of anecdotal observations that his patients often failed to comply with a drug regimen as they tired of it, although Whitty himself neither confirmed nor denied this attribution.<sup>43</sup> SAGE minutes for March 13, 2020, advanced only an intuitive and experiential basis for the assumption.<sup>44</sup>

<sup>41</sup> Secunder Kermani, “Coronavirus: Whitty and Vallance Faced ‘Herd Immunity’ Backlash, Emails Show,” *BBC News*, September 22, 2020, <https://www.bbc.co.uk/news/uk-politics-54252272>.

<sup>42</sup> Scientific Pandemic Influenza Group on Behaviors (SPI-B), “Insights on Combined Behavioral and Social Interventions, March 4, 2020, <https://assets.publishing.service.gov.uk/media/5ecd422b86650c76ab17fc2b/04-spi-b-insights-on-combined-behavioural-and-social-interventions.pdf>, 1.

<sup>43</sup> Nigel Harvey, “Behavioral Fatigue: Real Phenomenon, Naïve Construct, or Policy Contrivance?” *Frontiers in Psychology* 11 (2020), <https://www.frontiersin.org/journals/psychology/articles/10.3389/fpsyg.2020.589892/full>.

<sup>44</sup> Scientific Advisory Group for Emergencies, “Fifteenth SAGE meeting on Wuhan Coronavirus (Covid-19),” March 13, 2020, [https://assets.publishing.service.gov.uk/media/5ed12cbc86650c76b3d74c27/S0383\\_Fifteenth\\_SAGE\\_meeting\\_on\\_Wuhan\\_Coronavirus\\_Covid-19\\_.pdf](https://assets.publishing.service.gov.uk/media/5ed12cbc86650c76b3d74c27/S0383_Fifteenth_SAGE_meeting_on_Wuhan_Coronavirus_Covid-19_.pdf), 4.

The concept of behavioral fatigue did not arise, however, from SPI-B, some of whose members defected to another discourse coalition that formed around a counternarrative. That coalition, comprising a group of prominent behavioral scientists, issued an open letter on March 16, 2020, stating that “we are not convinced that enough is known about ‘behavioral fatigue’ or to what extent these insights apply to the current exceptional circumstances.” This counternarrative invoked a British cultural trope; by attempting to “carr[y] on as normal’ for as long as possible,” the government was undercutting a sense of the urgency of the moment and wasting a “unique window for delaying the spread of COVID-19.”<sup>45</sup>

A further problem with the paradigmatic characters populating the SAGE models relates to the distribution of risks. As was the case cross-nationally, these characters were generic and homogeneous. Assumptions about behavior, including social activity, were attributed to the average member of society, evoking at best what Suzanne Keen conceives as “broadcast empathy,” appealing to “common human experiences, feelings, hopes, and vulnerabilities.”<sup>46</sup> But experiences and vulnerabilities were *not* common across the population. These generic characters failed to represent the lived dynamics of the pandemic and could not evoke the “ambassadorial” empathy necessary “to feel with others who are less commonly placed within the empathetic circle.”<sup>47</sup> Risk factors for susceptibility, exposure, and death varied markedly across subgroups of the population, often concentrated in geographic settings where these risks are amplified. Heterogeneous modeling, stratified to recognize these different “micro-epidemics,” might have yielded different values for  $R_0$  and different doubling times than do those using generic S-I-R groups.<sup>48</sup> Despite recognition within SAGE of the differential impact of the pandemic and of public health restrictions at various points, this acknowledgment was not incorporated into populating the models that guided the adoption of public health restrictions, although it was later incorporated into vaccination strategy. The only recognition of difference among the characters in the models related to vulnerability based on age or immune-system function, not on social determinants embedded in their broader life stories and circumstances.<sup>49</sup> The fundamental trade-offs of costs and benefits across different socioeconomic groups were masked.

Scenario development and paradigmatic characters were not the only heuristic contributions of narratives during the pandemic. Trisha Greenhalgh and her colleagues extensively explore the role that narratives from different

<sup>45</sup> U.K. Behavioural Scientists, “Open Letter to the U.K. Government Regarding COVID-19,” March 16, 2020, <https://sites.google.com/view/covidopenletter/home>.

<sup>46</sup> Suzanne Keen, “Empathetic Hardy: Bounded, Ambassadorial, and Broadcast Strategies of Narrative Empathy,” *Poetics Today* 2, no. 2 (2011): 371.

<sup>47</sup> Keen, “Empathetic Hardy,” 375.

<sup>48</sup> Sharmistha Mishra, “Mathematical Modeling of Epidemics: Are We Confronting or Amplifying Health Inequities?” February 16, 2023, Fields Institute for Research in Mathematical Sciences, Toronto, YouTube video, <https://www.youtube.com/watch?v=9KlZvbrYaA4>.

<sup>49</sup> Gerrit Grossmann, Michael Backenkohler, and Verena Wolf, “Why ODE Models for COVID-19 Fail: Heterogeneity Shapes Epidemic Dynamics,” *medRxiv*, March 26, 2021, <https://www.medrxiv.org/content/10.1101/2021.03.25.21254292v1.full>.

perspectives played in the debate over the mechanism of transmission of the virus, specifically, the size of the particles by which it spread.<sup>50</sup> The question of the relative importance of large droplets and much smaller aerosols became bound up in contests between discourse coalitions in which narrative frames competed with each other as well as with nonnarrative discourse. The clashes of values that infused these contests gave them a ferocity beyond typical scientific debate. Because aerosol spread implied different kinds and stricter degrees of stringency in public health measures than did droplet spread, the droplet-versus-aerosol debate triggered conflicts between individualist and solidaristic values. Because the science around droplet spread was more certain than was the partial but growing accumulation of evidence for aerosol spread, the debate also reflected different orientations to risk and how precautionary policy should be. Even after the World Health Organization (WHO) acknowledged aerosol transmission in December 2020, the contests continued. Scientists and those they advised became identifiable characters on one side or the other, requiring some “face-saving” if positions were to shift.<sup>51</sup>

### **Constitutive narratives: Science as quest, venture, and crusade**

While heuristic narratives infused distributional values into the content of public policy, the constitutive narratives that shaped the understanding of the role of science in the policy process itself had important implications for the democratic accountability of the relevant actors. In such constitutive narratives, scientific investigators and the policymakers whom they advised were presented as characters in a plot. Over the course of the COVID-19 pandemic, at least three different narrative motifs emerged, featuring characters with different motives and plots with different end results. Each of these was a “romance” epic of the progress of heroes in pursuit of a goal, but the goal was different in each case. Each was also congruent with some demands of the science-advising process and incongruent with others. These congruences and incongruences kept all of the narratives in play, with destabilizing effects on the process.

The depiction of scientific findings as the result of a course of scientific inquiry lends itself to a “quest” narrative,<sup>52</sup> in which the moral is that science must be guided by a pure and enduring search for “truth,” unpolluted by other objectives or commitments to particular routes to the end result. There may be failures along the way, but the heroism of the seeker(s) lies not in the ultimate attainment of the goal but in their persistence. Fellow scientists are comrades on that journey; their common mission binds them, even when they must contend with each other about the path to be followed. Indeed, that comradeship and

<sup>50</sup> Trisha Greenhalgh, Mustafa Ozbilgin, and David Tomlinson, “How Covid-19 Spreads: Narratives, Counter Narratives, and Social Dramas,” *British Medical Journal* 378 (2022), <https://www.bmj.com/content/378/bmj-2022-069940>; Jose L. Jimenez et al., “What Were the Historical Reasons for the Resistance to Recognizing Airborne Transmission during the COVID-19 Pandemic?” *Indoor Air* 32 (2022), <https://onlinelibrary.wiley.com/doi/10.1111/ina.13070>.

<sup>51</sup> Jimenez et al., “What Were the Historical Reasons?” 12.

<sup>52</sup> Kevin Padian, “Narrative and ‘Anti-Narrative’ in Science: How Scientists Tell Stories, and Don’t,” *Integrative and Comparative Biology* 58, no. 6 (2018): 1226.

contention is an essential part of the quest, a corrective against false leads and a redemption from failure. The institutional narrative of science depicts an “epistemic community” with a past, present, and future and with its own heroes in which “each scientist ‘stands on the shoulders of giants’ and for which community criticism is part of the assurance of reliable knowledge.”<sup>53</sup> In building upon each other’s work, scientists must be able to trust in their mutual allegiance to the scientific quest. In this sense, science is deeply morally inflected; it constitutes a “moral order” based on the fiduciary commitment of its members to each other and to a common pursuit.<sup>54</sup> By extension, the democratic accountability of scientists is also a fiduciary commitment, namely, that the results of scientific inquiry will not be swayed by particular interests but can be trusted and relied upon in public and private decision-making. Accordingly, scientists must themselves be indifferent to the implications of their advice for particular policy recommendations, lest they be lured away by the desire to achieve a certain outcome.

The quest narrative is consistent with an understanding of science as a *method*, not a set of received and agreed-upon facts. The mutual commitment of scientists is thus to the method—the quest—not to the end result. However, the quest narrative is in fundamental tension with the essence of policymaking; decision-makers want products in the form of predictions of the likely outcomes of different courses of action so that they can choose among them.

The demands of the policy process are more consistent with a second narrative arc: the “venture.” Science advice for policymaking draws scientists into what Helga Nowotny and her colleagues characterize as “Mode 2” science, conducted in the “agora” of “jostling ‘publics’” in which problem definition and response takes place, in contrast to the classic peer-based model “Mode 1.”<sup>55</sup> If we see the quest as the organizing narrative of “Mode 1” science, the venture is the corresponding organizing narrative of “Mode 2.” In it, scientists become not dispassionate seekers of truth, but partners in a project aimed at achieving some specified social objective. In contrast to the moral of indifference to the quest’s outcome, the moral of the venture is that scientists, like others in the agora, have a responsibility to engage in the accomplishment of some mutually preferred outcome. In such a policy-oriented venture, scientists bring their knowledge to the service of a public good, but they must also compromise with other characters on the questions to be pursued, if a commonly agreed outcome is to be achieved. The venture narrative potentially provides a platform of understanding common to both scientific advisors and those whom they advise, but it runs against the grain of the self-understanding that scientists bring with them into that process.

Moreover, in practice, the boundary between the realm of pure scientific inquiry and the agora—the point at which the quest diverts to become a venture

<sup>53</sup> Douglas, “Politics and Science,” 298–99.

<sup>54</sup> Harré, “Some Narrative Conventions,” 84.

<sup>55</sup> Helga Nowotny, Peter Scott, and Michael Gibbons, “‘Mode 2’ Revisited: The New Production of Knowledge,” *Minerva* 41, no. 3 (2003): 192.



—is rarely clear and constantly renegotiated.<sup>56</sup> The purity of the quest and venture narratives is, therefore, likely to yield to a hybrid of both, as we shall see below in the case of SAGE.

Scientists can see the directions in which their advice is likely to lead and the risks that would be involved in following it and, as members of the polity, they are likely to have policy preferences. Because scientists may differ in those preferences, scientific dissent can become caught up in policy debate. To the extent that scientific inquiry becomes tied to certain normatively preferred policy objectives, the narratives of quest or venture morph into a third narrative genre, the “crusade,” in which the scientist pursues the “good” of worthy beneficiaries. Those who disagree are depicted not as contesting comrades in a common quest or partners in a venture, but as opponents who seek a different end for the benefit of different, less worthy allies and whose backgrounds and motives are suspect. Accountability must be to the worthy beneficiaries, not to either peers or partners who may have been corrupted by other motives. The fierce contests that characterized debates around opening or closing schools during the pandemic in various nations exemplified such crusade narratives, in which evidence of different harms and benefits was marshaled within competing narrative frames, so that the same characters could be cast as either heroes or villains.<sup>57</sup> Unlike the quest and the venture, the crusade narrative explicitly recognizes the “inherently political” aspects of science advising, making it inherently conflictual.

Each of these contesting narratives has a moral about the ethics of behavior for scientists in a crisis and embeds a different conception of democratic accountability. Is the responsibility of scientists to be “seekers,” true only to the quest for truth and accountable only to their peers, refraining from value judgments about the ends of public policy while elected officials bear the weight of democratic accountability for value trade-offs? Alternatively, does the impossibility of disentangling scientific and political judgment require scientists to be “partners” with elected officials in the common venture of maximizing social welfare, even at the sacrifice of normal lines of accountability, at least in the extraordinary circumstances of a pandemic?<sup>58</sup> Yet again, do those circumstances call scientists to be “crusaders” in the cause of protecting the public interest, when they perceive governments to be failing to do so, and to be democratically accountable themselves by opening their deliberations to public scrutiny? These are fundamentally important questions in advanced democracies and not even scientists who see themselves as objective seekers of truth can evade taking a moral stand.

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<sup>56</sup> Thomas F. Gieryn, “Boundary-Work and the Demarcation of Science from Non-Science: Strains and Interests in Professional Ideologies of Scientists,” *American Sociological Review* 48, no. 6 (1983): 781–95; Wiebe E. Bijker, Roland Bal, and Ruud Hendriks, *The Paradox of Scientific Authority: The Role of Science Advice in Democracies* (Cambridge, MA: The MIT Press, 2009).

<sup>57</sup> A prominent example is the depiction of economist Emily Oster. Dana Goldstein, “She Fought to Reopen Schools, Becoming a Hero and a Villain,” *New York Times*, June 22, 2021, <https://www.nytimes.com/2021/06/22/us/emily-oster-school-reopening.html>.

<sup>58</sup> Birch, “Science and Policy in Extremis,” 11–14.

Narratives featuring each of these types of plots—quest, venture, and crusade—emerged during the process of science advising in the U.K. and a competition of narratives ensued. There was a constant tension between “quest” and “venture” narratives from the outset. The quest motif plausibly fit scientists’ understanding of themselves as independent investigators. However, lacking any role for policymakers other than as passive recipients of advice, the quest offered an implausible account of the actual policymaking process. The narrative advanced by the insider coalition of government and scientific actors was, therefore, an attempted amalgam of the quest narrative of the academy with the venture narrative of the agora. This fusion of motifs depicted a group of heroes who diverted from their academic quest to come to the aid of a community under threat. In it, leading British scientists rallied from their various institutional bases to the call of a government in need of help in grappling with a shadowy enemy, to pierce the veil of uncertainty and find a basis for action. They had worked at the frontiers of science in the past and would continue to do so in the future; science advising was an episode in responding to a crisis. They would engage with policymakers, but would confine themselves to offering scientific truth, refraining from any involvement in making policy choices. There was a nationalist tinge as well, as world-leading British scientists would help to craft a “bespoke” model for the U.K. The introduction to the first report of the parliamentary Science and Technology Committee (STC) examining the government’s response to COVID-19, produced in December 2020, captures this narrative:

The coronavirus pandemic has marked the most significant test of the way that the UK Government takes and acts on scientific advice in living memory. The scientific community—in academia, in the public sector and in industry—has risen to that challenge in extraordinary and, in many cases, unprecedented ways. This Committee, on behalf of the House of Commons, is deeply grateful for the tireless, expert and unstinting work of everyone who has sought to understand the threat of covid-19 from its earliest appearance, and who have brought their experience, ingenuity and judgement to bear on mitigating its impacts and seeking treatments and vaccines against it. The high reputation of UK science is founded on openness and relentless self-challenge—looking always to test current theories and practices against new evidence and explanations, without sentiment and with a relish for discovery.<sup>59</sup>

At the beginning, this quest-venture composite leaned toward the quest, portraying scientific advisers as “independent” from government, pursuing the course of discovery according to their own scientific understanding even as they did so in the service of government decision-makers. Statements from leading advisers continually emphasized that they offered advice and did not

<sup>59</sup> House of Commons, Science Technology Committee, “The U.K. Response to Covid-19: Use of Scientific Advice,” *First Report of Session 2019–21*, HC 136 (London: House of Commons, January 8, 2021), <https://publications.parliament.uk/pa/cm5801/cmselect/cmsstech/136/136.pdf>, 3.

make policy decisions. Testimony by Sir Patrick Vallance, the GCSA and chair of SAGE, to the STC is illustrative of statements he and other advisers made throughout the process:

Sir Patrick Vallance: What we are doing is laying out scientific reasons behind options, from which people can choose. Overlaying that with economic and other considerations is the job of Government. [If we disagreed with a government action] we would stand up and say, “You absolutely should not do that, in our opinion, from the science.”

Chair: That is part of the independence of SAGE.

Sir Patrick Vallance: It is part of the independence. It is worth remembering that the membership of SAGE is a group of people who, largely, come from outside Government. They are independent and are not paid or contracted. Therefore, they give their views freely and frankly.<sup>60</sup>

This independence was key to the identity<sup>61</sup> of the central characters. In a media interview during the early phase of the pandemic, Vallance summed up his role: “My job as chief scientific advisor is to speak scientific truth to power and say it as it is.”<sup>62</sup>

Other statements issued with the imprimatur of SAGE tell a similar story. An “explainer” of its role and responsibilities states:

SAGE’s role is to provide unified scientific advice on all the key issues, based on the body of scientific evidence presented by its expert participants... . The advice is used by Ministers to allow them to make decisions and inform the government’s response to the COVID-19 outbreak... . SAGE is comprised of leading lights in their representative fields from across the worlds of academia and practice. They do not operate under government instruction.<sup>63</sup>

However, the actual experience of the science-advising process was messier. In a close and extensive reading of SAGE minutes, Paul Cairney demonstrates how science advisers and government officials struggled to “negotiate the blurry

<sup>60</sup> House of Commons, Science and Technology Committee, “Oral Evidence: UK Science, Research and Technology Capability and Influence in Global Disease Outbreaks,” HC 136 (London: House of Commons, July 16, 2020), <https://committees.parliament.uk/oralevidence/701/pdf/>, Q1041–42.

<sup>61</sup> The role of narrative in identity formation has been a topic of rich philosophical exploration. See, e.g., Marya Schechtman, *The Constitution of Selves* (Ithaca, NY: Cornell University Press, 1996), arguing that a narrative frame integrates the past, present, and future experiences of an individual into a coherent whole and provides a ground for moral responsibility.

<sup>62</sup> “UK Needs to Get COVID-19 for ‘Herd Immunity,’” Interview with Sir Patrick Vallance, *Sky News*, March 13, 2020, YouTube video, <https://www.youtube.com/watch?v=2XRc389TvG8> (min. 8:56).

<sup>63</sup> The Scientific Advisory Group for Emergencies, “The Scientific Advisory Group for Emergencies (SAGE): Q&A,” May 5, 2020, [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/883104/sage-explainer-5-may-2020.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/883104/sage-explainer-5-may-2020.pdf), 2.

boundary between scientific advice and political choice when they are so interdependent and rely so heavily on judgement in the face of ambiguity and uncertainty.”<sup>64</sup> Between January and June of 2020, Cairney identifies twenty-four instances in which SAGE effectively approved or disapproved a particular course of policy action, using the language that such actions are or are not “supported” by the science, that SAGE does or does not “recommend” particular actions, or that SAGE “advises” for or against such actions.<sup>65</sup> Another study of SAGE minutes from the early months finds that this sort of “normatively heavy” advice—that is, advice weighted toward favoring particular policy recommendations—became more common after an initial period of “normatively light” advice with no policy tilt.<sup>66</sup> However, SAGE consistently stopped short of *explicitly* saying what ought to be done, noting the need for political judgments weighing the implications for disease spread against other economic and social consequences of various policy actions. Yet another study over a longer period suggests that SAGE’s advice became less likely to verge on policy choices after the first few months of the pandemic.<sup>67</sup>

The quest-venture narrative of the participants in the SAGE process accommodated the ambiguity of their relationships and allowed them to navigate a shifting boundary between science and policy over time. Its plausibility was severely tested, though, by the relatively slow and cautious approach to the introduction of restrictions on social activity from January to March of 2020. The specter of the rampant spread of the disease in other European jurisdictions where it was more advanced fed public anxiety that not enough was being done to forestall the same fate for Britain. In this context, the contest of narratives over “herd immunity” noted above also became bound up in a narrative contest around the policy process itself. The quest-venture narrative was challenged by counternarratives both within the scientific community and in the media. A common media narrative depicted a thwarted quest, with a government willfully ignoring and silencing the “truth” spoken by its scientific advisers, as parodied in this journalistic critique:

Once upon a time there was a wicked and reckless government. When a deadly new disease reached its shores, the government decided to let nature take its course. The politicians believed that there was no point trying to stop the virus. They thought it should be allowed to run rampant until the population had achieved herd immunity.

Scientists were very concerned by the government’s approach. They thought the politicians were being cavalier and urged them to reconsider, but the politicians would not listen. It was not until a brave scientist called Neil Ferguson showed how many people would die if the government did not introduce a lockdown that the politicians started to realise that they had

<sup>64</sup> Cairney, “COVID-19 Policy in the U.K.”

<sup>65</sup> Cairney, “COVID-19 Policy in the U.K.,” Table 2.

<sup>66</sup> Birch, “Science and Policy in Extremis,” 1.

<sup>67</sup> Baker et al., “COVID-19 and Science Advice.”

been wrong. Even after this warning, they dithered and delayed for a whole week before they did what was needed. If only they had listened to the scientists earlier, many lives would have been saved.<sup>68</sup>

Another counternarrative, more common within the scientific community, portrayed a corrupted venture, depicting both the content and the process of the SAGE venture as having been corrupted by its closeness to government. This perspective was fed by standing governmental practices under which government officials could attend SAGE meetings and neither the membership nor the minutes would be publicly disclosed; it was further fueled by the disclosure that Dominic Cummings, the Prime Minister's closest adviser, had attended some SAGE meetings.<sup>69</sup> This was essentially the story told by Richard Horton, editor of the prestigious medical journal *The Lancet*. In an opinion piece in *The Guardian*, Horton describes "a regime that has lost its moral compass," in which "[t]he relationship between scientists and ministers has become dangerously collusive [as] advisers have become the public relations wing of a government that has betrayed its people." Although Horton portrayed the advisers themselves as "great people" trapped within a catastrophically failed system,<sup>70</sup> he later lamented that others had taken the story further to attribute corrupt motives to the advisers, such as the protection of research funding or financial interests in diagnostic and pharmaceutical firms.<sup>71</sup>

In this context, calling out the SAGE process and its output became a crusade to rescue science from a collusive venture. A key event in this narrative was the establishment, under the leadership of a former Government Chief Science Adviser, Sir David King, of a group of scientists styling themselves "Independent SAGE." This banner was narratively rich: the group would do what SAGE *ought* to do, but it would do so *independently* of government. Key to this independence was the openness of its proceedings and advice, in contrast to the initial withholding of information about SAGE membership and minutes (in keeping with earlier practice). As King put it, the founders of Independent SAGE had acted because:

We wanted a mechanism to be available for providing transparent advice to both the government and the public at each stage... . The response of the media and the public to our work demonstrates the need for openness to retain trust in this biggest health challenge to the country for 100 years.

<sup>68</sup> Chris Snowdon, "The Lockdown's Founding Myth," *The Critic*, May 28, 2020, <https://thecritic.co.uk/the-lockdowns-founding-myth/>. See also, Ron Hodges et al., "The Role of Scientific Expertise in COVID-19 Policy-Making: Evidence from Four European Countries," *Public Organization Review* 22, no. 2 (2022): 249–67.

<sup>69</sup> Laurie Clarke, "Covid-19's Rebel Scientists: Has iSAGE Been a Success?" *British Medical Journal* 375 (2021), <https://doi.org/10.1136/bmj.n2504>.

<sup>70</sup> Andrew Anthony, "The Lancet's Editor: 'The U.K. Response to Coronavirus Is the Greatest Science Policy Failure for a Generation'," *The Guardian*, June 14, 2020, <https://www.theguardian.com/politics/2020/jun/14/the-lancets-editor-the-uk-response-to-coronavirus-is-the-greatest-science-policy-failure-for-a-generation>.

<sup>71</sup> Richard Horton, "Offline: Science and the Breakdown of Trust," *The Lancet* 396, no. 10256 (2020): 945.

With a stronger, transparent SAGE system in place, tens of thousands of lives in Britain would not have been lost to COVID-19, and our economy would already be on the road to recovery.<sup>72</sup>

The principal focus of “Indie SAGE” was on accountability through direct public communication. It did not do its own modeling or other research. The group held weekly meetings openly accessible online and developed a sophisticated media outreach strategy with the technical and financial assistance of an activist group, The Citizens, a media-monitoring body with a mission to protect “democracy, data rights and disinformation [and to] finding new ways to hold power to account.”<sup>73</sup> In turn, this association fed a counternarrative about Indie SAGE as having its own political agenda, especially after the group explicitly endorsed particular policy approaches, such as “zero COVID.” Consistent with a crusade narrative, however, a later Chair of Indie SAGE embraced this agenda-driven role for the group: “The whole covid response has been very political, and science has had to become political.”<sup>74</sup>

### The denouement of narrative competition: An unsettled discourse

As this contest of narratives played out, the plausibility of each was tested against the actual experience of the pandemic and the policies adopted in response. Britain’s high rates of case incidence and death called the heroic quest-venture into question, driving a narrative evolution as those outside the central circle of the advice process came to play a larger role in framing the experience. Retrospective inquiries by parliamentary committees and by a government-appointed public inquiry captured some of the continuing conflict of perspectives. The third report of the parliamentary committee on science and technology, issued as a joint report with its sibling health committee in October of 2021, shifted markedly from the portrait of the quest-venture presented in its first report almost a year prior (as quoted above). It now decried the “slow and gradualist” approach to the introduction of public health measures at the outset and judged that “decisions on lockdowns and social distancing during the early weeks of the pandemic—and the advice that led to them—rank as one of the most important public health failures the United Kingdom has ever experienced.”<sup>75</sup> The moral of the quest-venture fusion in this telling shifted toward that of the venture, asserting a stronger role for the governmental partner as custodian of the public interest and stating that “accountability in a

<sup>72</sup> David King, “I Worked to Build a Bridge between Science and Government: Now the Relationship Has Broken Down, Costing Thousands of Lives,” *Prospect Magazine*, July 5, 2020, <https://www.prospectmagazine.co.uk/ideas/technology/40378/i-worked-to-build-a-bridge-between-science-and-government-now-the-relationship-has-broken-downcosting-thousands-of-lives>.

<sup>73</sup> “The Citizens,” <https://the-citizens.com/about-us/>.

<sup>74</sup> Clarke, “Covid-19’s Rebel Scientists,” 2.

<sup>75</sup> House of Commons, *Coronavirus: Lessons Learned*, 32.

democracy depends on elected decision-makers taking advice, but examining, questioning and challenging it before making their own decisions.”<sup>76</sup>

The joint committee report also called into question the reliance on scenario-building and modeling as well as the heuristic narratives that guided them, in light of what actually transpired. In particular, the “fatalistic” narratives of inexorable spread and the noncompliance narrative of “behavioral fatigue” did not plausibly fit with the subsequent experience of the effectiveness of public health restrictions once they were adopted, in Britain and elsewhere.<sup>77</sup> A later public inquiry revealed an even more unsettled discourse. Appointed in June of 2022, the U.K. COVID Inquiry held six weeks of public hearings a year later, in which contesting accounts of the policy process and its effects were aired, many from different partisan perspectives bound up with lingering disputes over the values underlying the “austerity” and Brexit agendas of previous Conservative governments.<sup>78</sup>

In summary, throughout the pandemic, competing judgments about scientific independence and democratic accountability, about the risks of action and inaction, and about the appropriate balance of costs and benefits to society as a whole and to subgroups of the population were filtered through the narrative perspectives of different discourse coalitions. This narrativization of the process had both positive and negative effects. On the one hand, it provided common platforms for the integration of disparate types of knowledge relevant to policymaking. On the other hand, the emotive quality of the narratives sharpened the conflict among competing coalitions. No overarching story or reconciling “meta-narrative”<sup>79</sup> emerged. The contest to tell the lasting story of science advice during COVID-19 continues and, if experience<sup>80</sup> is a guide, the narrative deposit that survives this pandemic will seed the ground for the next.

**Competing interests.** The author declares none.

<sup>76</sup> House of Commons, *Coronavirus: Lessons Learned*, 42.

<sup>77</sup> House of Commons, *Coronavirus: Lessons Learned*, 42, 45–46.

<sup>78</sup> The first report of the U.K. COVID Inquiry was released in summer 2024, too late to be incorporated in this essay. As of the time of writing, this journalistic report summarized key aspects of its proceedings: Robert Booth, “A Nation Off-Guard: What the U.K. Covid Inquiry Has Revealed,” *The Guardian*, July 19, 2023, <https://www.theguardian.com/uk-news/2023/jul/19/uk-covid-inquiry-pandemic-planning>.

<sup>79</sup> Emery Roe, *Narrative Policy Analysis: Theory and Practice* (Durham, NC: Duke University Press, 1994).

<sup>80</sup> Alastair Stark, *Public Inquiries, Policy Learning, and the Threat of Future Crises* (Oxford: Oxford University Press, 2018).

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