The Ethics of Engaged Scholarship in a Complex World

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Abstract: Social scientists must grapple with how to pursue knowledge about an uncertain and complex world. This challenge is accentuated when scholars wish to engage responsibly with policymakers and the public in the interests of social betterment. In this essay, we use the scholarly literature on uncertainty and complexity to examine how these issues complicate the practice of engaged scholarship. We ground our analysis in interviews with publicly engaged scholars on the ethical challenges they have faced and how they have navigated uncertainties and complexities in their applied work in peace and security. We identify four broad ethical dilemmas associated with publicly engaged scholarship and propose ways that scholars might begin to navigate these challenges. Our analysis urges greater acceptance of uncertainty and complexity in the social science community and associated epistemic humility in collective scholarship, pedagogy, and public engagement.

Is it not in the interest of social science to embrace complexity, be it at some sacrifice of its claim to predictive power?

— Albert O. Hirschman[1]

I. Introduction: On (not) Knowing

Imagine two worlds in which scholars engage to promote social betterment. The two worlds are alike in all respects but for their epistemic conditions. In the first, scholars have the possibility of sufficient, even if incomplete, knowledge and can know well enough the causal models of the domains in which they operate. The models are largely appropriate to the nature of the problems that arise and give adequate guidance for policy and other interventions. The world they confront is ergodic, with the past providing sufficient guidance to the future. They can know at least

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[1] Albert O. Hirschman, 2013[1986], 'Rival views of market society', in Jeremy Adelman, ed., *The essential Hirschman* (Princeton, NJ: Princeton University Press, 2013), pp 214-47 at p. 243.

approximately how decisionmakers and target populations will respond to their advice. They also know a good bit about the relevant scope conditions and salient contingencies that will bear on the impact of their interventions. Is this a caricature of how engaged scholars approach their work? We think not, since a significant portion of mainstream scholarship routinely speaks of the world as if it can be sufficiently known.

Now consider a second world characterized by the impossibility of sufficient knowledge. Given inescapable uncertainty, scholars cannot ever know enough to be sure of the causal mechanisms operating in a non-ergodic, complex, and unpredictable world. Many problems are 'wicked' rather than simple.[2] A wicked problem 'is not well bounded, is framed differently by various groups and individuals, involves large scientific to existential uncertainties, and tends not to be well understood until after the formulation of a solution'.[3] In this world causal models are always deficient in some ways or other, but scholars cannot know precisely how. They cannot know enough about the people they hope to serve—about how they will behave as the world changes, or about their values and goals, which, too, will evolve over time. They cannot know what imaginable goals are achievable or how to achieve them.

For well over a century, since the emergence of the modern social sciences, many academics have been trained to conduct research as if they inhabited the first world. This is particularly true of economics training (a discipline shared by two of the authors of this paper) where an appealing positivist epistemological story has dominated in the profession.[4] But similar epistemic presumptions are present in political science (disciplinary home to the other two authors) and beyond. Social science training focuses on knowing what is knowable today or in some proximate future. This is what methods training aspires to do—to guide scholars in ascertaining the causal relations between some variables x_i and other variables y_i, which are presented as accessible to social scientists. Armed with the newest and most sophisticated research techniques, initiates to our professions are led to believe that their sciences are trending

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[2] Horst W.J. Rittel and Melvin M. Webber, 'Dilemmas in a general theory of planning', *Policy Sciences* 4: 2, 1973, pp. 155–69; Kate Crowley and Brian Head, 'The enduring challenge of "wicked problems": revisiting Rittel and Webber', *Policy Sciences* 50: 4, 2017, pp. 539–47.

[3] Robert Lempert, 'Embedding (some) benefit-cost concepts into decision support processes with deep uncertainty', *Journal of Benefit-Cost Analysis* 5: 3, 2014, pp. 487–514 at p. 488.

[4] David Colander, 'From muddling through to the economics of control: view of applied policy from J.N. Keynes to Abba Lerner', *History of Political Economy* 37: 1, 2005, pp. 277–91.

toward more adequate knowledge over time. We know more today, the reasoning goes, so there is less we don't know. The progressive view of science assures scholars that their practice will promote rather than undermine social betterment and that the quality of their interventions will improve over time.

At the same time, though, there has been more and more recognition of the deep uncertainties that pervade physical and social life. In part this is due to an important shift in ontological presumptions that guide social science research. The quantum revolution in physics, with fundamental uncertainty at its core, has been widely accepted. Research on the importance of intersubjectivity and the social construction of reality has become a central part of many social science disciplines. Scholars in the social sciences have also begun to explore a quantum turn. Complexity theory and network theory have grown in influence and focus on understanding dynamics and relationships rather than only causal claims. In this situation, as Friedrich Kratochwil and John Ruggie wrote about regime theory in international relations decades ago, 'we have the most debilitating problem of all: epistemology fundamentally contradicts ontology!'[5]

We might consider this a third world—one characterized by the ontological complexity of the second but populated by decisionmakers and scholars who *think* they inhabit something like the first. *Hic Sunt Dragones!* Here, the contradiction between ontology and epistemology is not only a threat to productive research, as Kratochwil and Ruggie argued, it is also a threat to productive policy engagement. We submit that the world is made substantially more perilous by an egregious misrecognition of a confounding world as adequately knowable. When engaged academics mischaracterize their uncertain world as simple and accessible, and when they act on this mischaracterization, they risk causing gratuitous harm as they work to promote social betterment.

Economics exemplifies the problem, as recent history illustrates. By the early 2000s a sense of a 'Great Moderation', or a reduction in macroeconomic fluctuations since the mid-1980s, had taken hold among leading macroeconomists. Stock and Watson, even as they characterized it, were careful to attribute most of this reduction to 'good luck in the form of smaller economic disturbances', and they concluded with this warning to the profession: 'the

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[5] Friedrich Kratochwil and John Gerard Ruggie, International organization: a state of the art on an art of the state', *International Organization* 40: 4, 1986, pp. 753–775 at p. 764.

quiescence of the past fifteen years could well be a hiatus before a return to more turbulent economic times'.[6] Unfortunately, that warning was dismissed as leading macroeconomists sought to take credit for improved economic performance. For instance, in 2007 macroeconomist Christina Romer, who would soon be appointed by President Obama as chair of the Council of Economic Advisors, congratulated the profession on the adequacy of macroeconomic theory just before a global crisis she did not anticipate was about to destroy innumerable livelihoods: 'We have seen the triumph of sensible ideas and have reaped the rewards in terms of macroeconomic performance. … The costly wrong turn in ideas and macropolicy of the 1960s and 1970s has been righted, and the future of stabilization looks bright.'[7] Romer was by no means an outlier in what amounted to a Titanic moment for the profession. Her naive view of the capacities of modern-day macroeconomists to pilot the economy was widely shared just as the world economy was to be wrecked by an overlooked iceberg. Federal Reserve Chair Ben Bernanke expressed unqualified confidence when speaking about financial trends right up to the onset of the crisis. As late as July 2008 Ben Bernanke told all who would listen that financial markets were adequately regulated. Just weeks before the crisis emerged, Bernanke assured the US House Financial Services Committee that 'the GSEs [government-sponsored enterprises, i.e., Freddie Mac and Fannie Mae] are adequately capitalized. They are in no danger of failing'[8]. Two months later the US Treasury was forced to purchase up to $100 billion in GSE securities to prevent a global financial implosion. We are reminded in this context of the famous quip attributed to the humourist Josh Billings: 'It ain't so much men's ignorance that does the harm as their knowing so many things that ain't so.'[9]

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[6] James H. Stock and Mark W. Watson, 'Has the business cycle changed and why'? *NBER Macroeconomics Annual* 17, 2002, pp.159–218.

[7] Christina Romer, cited in Virginia Postrel, 'Macroegonomics', *The Atlantic*, April 2009, https://www.theatlantic.com/magazine/archive/2009/04/macroegonomics/307319/

[8] David M. Herszenhorn and Steven R. Weisman, 'Republican leader in US house confident in rescue plan', *New York Times,* July 17, 2008, https://www.nytimes.com/2008/07/17/world/americas/17iht-17fannie.14558589.html

[9] Lucy Elliot Keeler, 'My garden beasts', *The Atlantic* 112, 1913, pp.134–41.

II. A New Epistemic Awareness?

During our respective careers—now spanning three to four decades—we have begun to see a promising shift among some members of our respective disciplines. Today there is greater talk not only of uncertainty but also of its epistemic implications than was the case when we were trained. This understanding was likely encouraged by the rapid series of history-altering 'black swans' in the social world from the 1980s forward that even the most astute social scientists failed to anticipate.[10] The list ranges from domestic US developments (from the rise of the Tea Party movement to the election of Donald Trump and the January 6th insurrection at the US Capitol) to international events (including the fall of the Berlin wall and the subsequent collapse of the Soviet Union, the extraordinary rise of China as an economic powerhouse, a succession of deep financial crises, the rise of illiberalism in democratic societies, the dramatic cultural and political effects of social media, and the Russian invasion of Ukraine). Awareness of the implications of uncertainty for what we know and how we know it is uneven, to be sure. But we find growing appreciation of the limits to certainty in academic writing, and in the applied work that scholars undertake beyond the university campus.

Over the course of the past century insightful scholars have emphasized epistemic limits even as their disciplines have struggled to repress the problem. John Dewey and Arthur Bentley most famously emphasized these limits in their *Knowing and the Known*.[11] Among 20th century scholars engaged with policymaking, Albert Hirschman's work perhaps best conveys awareness of the dangers associated with the epistemic error of 'knowing' too much. Hirschman warned against would-be social engineers armed with 'paradigms' that grossly oversimplified the economies of the Global South who readily introduced sure-fire policy solutions to pressing problems that more often backfired than succeeded.[12] The raw material for a different kind of engagement by scholars promoting social betterment has been available for a long time.

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[10] Nassim Nicholas Taleb, *The black swan: the impact of the highly improbable* (New York: Random House, 2007).

[11] John Dewey and Arthur F. Bentley, *Knowing and the known* (Boston: Beacon Press, 1949).

[12] Albert O. Hirschman, 'The search for paradigms as a hindrance to understanding', *World Politics,* 22: 3, 1970, pp. 329–343. See also discussion of Hirschman's work in Ilene Grabel, *When things don't fall apart: global financial governance and developmental finance in an age of productive incoherence* (Cambridge: MIT Press, 2017), Chapter 2.

Today, moving away from presuming a knowable, controllable world has become more widely acceptable. The theologian Sharon Welch draws a distinction between the 'ethic of control' held by privileged communities, which posits themselves as enjoying the right and the ability to bring about worlds that they value, and the 'ethic of risk' operating in marginalized communities, which harbour no illusion that they will ever know enough or that they can dictate outcomes.[13] Even some traditional economists echo Welch's sensibilities about knowledge and control. '[The] world we live in is not an ergodic world', writes Nobel prize winner Douglass North. 'For an enormous number of issues that are important to us, the world is one of novelty and change; it does not repeat itself.' [14]

The clear implication for those seeing the world in this way is that epistemology without space for uncertainty is a fool's errand.[15] We probe promising steps to accept and centre uncertainty below. First, we report on interviews with a range of publicly engaged scholars reflecting on the types of engagement and ethical dilemmas they have faced in their applied work. Their reflections lend support to our belief that the epistemic premise of the first world we describe above is illusory and that self-aware scholars confront uncertainty in most if not all facets of their work. We offer insights gleaned from the practice of thoughtful scholars about how to intervene in worlds we can't adequately know or control, and we discuss pedagogical practices to accelerate the ongoing shift toward epistemic self-awareness.

III. Learning from Self-Aware Engaged Scholars

The Sié Chéou-Kang Center at the University of Denver's Josef Korbel School of International Studies has undertaken a program of research, training, and outreach on public engagement, funded by the Carnegie Corporation of New York since 2014. As part of this research on responsible engagement Deborah Avant and Naazneen Barma interviewed or collected written reflections between 2021 and 2023 from 25 engaged scholars to learn about the

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[13] Sharon Welch, *A feminist ethic of risk* (Minneapolis: Fortress, 2000).

[14] Douglass C. North, 'Dealing with a non-ergodic world: institutional economics, property rights, and the global environment', *Duke Environmental Law & Policy Forum* 10: 1, 1999, pp. 1–12 at p. 3.

[15] George F. DeMartino and Ilene Grabel, 'Irreparable ignorance, protean power, and economics', *International Theory* 12: 3, 2020, pp. 435–48; George F. DeMartino, *The tragic science: how economists cause harm (even as they aspire to do good)* (Chicago: University of Chicago Press, 2022).

ethical challenges they experienced and navigated as part of their engaged scholarship related to peace and security, with a particular focus on how uncertainty and complexity affected their engagement. These scholars hail from a variety of disciplines in the social sciences that touch on issues of peace and security at local, national, or international levels. They are mostly based at North American universities, many in interdisciplinary schools of international affairs or public policy. They all indicated their interest in ethical issues via their participation on the Sié Center's ethical engagement panel.[16] We draw on these publicly available reflections and the interviews on which they are based, as well as the case vignettes in our ethical engagement curriculum, as an empirical basis for developing a framework on the types of ethical challenges associated with publicly engaged scholarship and how scholars might navigate challenges associated with uncertainty and complexity.

Academics who seek to inform policy-making and other forms of decision-making do so through a variety of practices of engaged scholarship.[17] Below, we present a stylized continuum of scholarly engagement at various degrees of remove from the ivory tower (Figure 1).

Figure 1: A stylized continuum of engaged scholarship practices
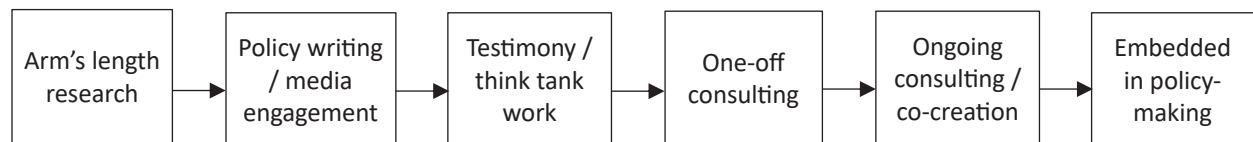
Even scholars who mostly inhabit the ivory tower engage indirectly with the public sphere by addressing contemporary events at arm's length in refereed publications. One step further into the public sphere occurs when scholars comment on contemporary events through various media channels and writing outlets aimed at public or policy audiences. An additional degree of engagement takes place when scholars participate in policy adjacent conversations, e.g., giving public testimony, joining think tank events, and contributing to public commissions

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[16] These reflections and details on the ethical engagement curriculum and research are available at: https://www.sieethicalengagement.com. We're grateful to Sevde Acabay-Oguc, Kelci Burckhardt, and Audrey Elliott and for their research assistance with the collection of the reflections.

[17] Bruce W. Jentleson and Ely Ratner, 'Bridging the beltway–ivory tower gap', *International Studies Review* 13: 1, March 2011, pp. 6–11; Naazneen H. Barma and James Goldgeier, 'How not to bridge the gap in international relations', *International Affairs* 98: 5, 2022, 1763–81.

and think tank reports. More direct forms of engagement include consulting with policymakers and practitioners, either on a one-off basis or via ongoing relationships, including those that involve the co-creation of applied research. Finally, scholars are most directly engaged when they are embedded in policy-making bodies, whether through termed fellowships or longer appointments to positions in government and other institutions.

We initially surmised that the nature of the challenges posed by uncertainty could intensify over the different types of engaged scholarship. Even scholars who choose to remain in the ivory tower should not be immune; they cannot know how their published research will be picked up, interpreted, and used by advocates and decision-makers beyond the academy. It may be simplified for use in public debate by those with agendas contrary to that of the scholars generating the work. Network analysis of human rights advocacy might, for example, be used by governments looking to track activists and repress rights campaigns. Such risks can be amplified by media engagement and policy writing, in which scholars seek to bring public attention to their research in hopes of affecting public discourse and policy decisions. Those who engage with the media cannot know how people with their own agendas will interpret, repackage, and even exploit the scholarship on which their engagement is based.

Researchers giving testimony in policymaking fora, participating in think tank events and reports, and providing arms-length consulting encounter parallel challenges that might be intensified by having the ear of decision-makers who sometimes wish to infer from research the findings that support their preconceptions and preferences.[18] In consulting relationships, both one-off and ongoing, scholars also face uncertainty regarding what restrictions might be placed on them by the client once the work is underway—especially in terms of who 'owns' and how to use shared data and research outputs. In addition, scholars face uncertainty about how findings might be framed by different parties to the research, particularly if the client seeks to use the research for its own interests. This is especially salient in contested environments. Ongoing consulting relationships may resolve some of these uncertainties while amplifying others. As the relationship deepens, researchers may come to understand how the client behaves and this

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[18] Stephen M. Walt, 'International affairs and the "public sphere"', *Foreign Policy*, 22 July 2011, https://foreignpolicy.com/2011/07/22/international-affairs-and-the-public-sphere/; Jeremy Shapiro, *Who influences whom? reflections on US government outreach to think tanks*, Brookings Institution, 4 June 2014, https://www.brookings.edu/blog/up-front/2014/06/04/who-influences-whom-reflections-on-u-s-government-outreach-to-think-tanks/.

information could provide insight into whether the policy interlocutor is trustworthy. But knowing that an interlocutor has problematic tendencies raises new uncertainties. Is it better to remain in an imperfect working relationship with a client, with opportunities to nudge them toward better decision-making, or is it better to terminate the work? If the latter, should one blow the whistle on the client? The researcher cannot know the effects of any of these strategies.

Scholars embedded in policy organizations face many of these uncertainties, complicated by the additional uncertainty of how they will manage the role conflict that arises when holding multiple identities with competing responsibilities. Those committed to their scholarly role may worry about becoming habituated to the norms and practices of the organization in which they (newly or temporarily) serve and fear making decisions that serve the organization rather than the broader concerns that drew them to the work initially. This tension is aggravated by the fact that embedded scholars necessarily serve the needs of those with whom they have contracted. It is not clear how a researcher should think about the balance between their scholarly principles and service to a policy organization in which they are embedded. Moreover, taking part in engaged scholarship may give scholars new insights that change their initial perspective. There are no simple decision rules to dictate which compromises are legitimate.

While parsing the challenges associated with different types of engagement is worthwhile, our interviews revealed that similar dilemmas rear their heads across the array of engagement types, and they can be eased as well as intensified by greater proximity. Based on how the scholars with whom we spoke described the challenges they experienced and navigated, we identified four broad concerns appearing across the engagement continuum. Importantly, the way individual scholars understood and responded to uncertainty was critical to the way they managed these engagement dilemmas.

1: The Insider Dilemma

The first dilemma that researchers described revolved around uncertainties concerning whether they could be effective in pushing for change from the inside. Some worried that moving from arms-length engagement to closer connections to policymakers might lead them to become complicit in perpetuating behaviour they deemed problematic. Others, though, saw close engagement as potentially leading to reshaping policymakers' perspectives in a positive way. In

our interviews, this dilemma was sharpest among people who were involved in longer- term relationships with their policy interlocutors and learned more about them over time.

As one climate change scholar engaged with the National Intelligence Council (NIC), they professed uncertainty about many aspects of climate change research. There is little doubt that climate change is happening, and they were certain about the importance of the issue and the need for the US government to give it more attention in its planning. There is much less certainty, though, over what climate change means for social systems, including violence and instability. Their goal in engaging was to garner attention from the US government and, while participating in the NIC scenario building process, they felt it had succeeded by raising attention to climate change. Yet after their engagement they came to feel that the exercise was insufficient. At the outset, they were suspicious of the ethics of those involved with the NIC and this suspicion intensified during their interactions. Even though climate change has received more attention in NIC reports, it is addressed almost exclusively through a geopolitical lens focusing on US security. The community is reluctant to consider the impacts of climate change for different populations around the world or to suggest that the US should be working harder to reduce its emissions. Given this, the scholar has not continued their engagement and would likely not reengage if asked. In their view, the US government is insufficiently invested in addressing this existential threat.

Another scholar focused on technology and ethics engaged with computer scientists and engineers writing artificial intelligence (AI) algorithms for the United States Air Force to address the humanitarian implications of their algorithms. They were torn about potentially being implicated in building programs that would one day take lives, and they had been critical of the way that even humanitarian discourse could justify violence. They chose to engage, however, because they thought they could inform those writing these programs who were otherwise unfamiliar with either the Law of Armed Conflict or how military culture can interact with machine learning in unexpected and unpredictable ways. They hoped to guide better design that could avoid key pitfalls and felt that those they engaged with listened and understood. They were generally fairly satisfied with the interactions and have maintained the relationships they built.

Still another scholar spoke of concerns about complicity in the context of giving presentations and teaching in authoritarian countries. They felt that this kind of engagement was important for supporting curious and otherwise 'beleaguered' academics in those countries and

providing information useful to students and scholars. Because they were often engaging around subjects unrelated to the repression in these countries, they were free to speak openly. But they also worried that they might become legitimizing 'window dressing' and help to 'burnish regimes' unintentionally by just being present. Even worse, they worried that in trying to open dialogue they could inadvertently say something that endangered or harmed those whom they were trying to support. In discussing how they dealt with these issues on a case-by-case basis, they reported feeling generally comfortable with how they had managed these situations in the past. But they were concerned that the intensification of authoritarian actions would make this harder to manage in the future, introducing an important temporal dimension into the calculus.

Scholars engaging with the private sector in multistakeholder fora also experienced this dilemma. One engaged with businesses through the UN's global compact in an effort to encourage responsible behaviour. Engaging with corporate entities, they thought, led people to be suspicious and they worried about their reputation as an independent scholar. They were also concerned that developing the relations of trust with business leaders required for successful engagement could compromise their independence. They did not want to be a tool for enabling businesses to varnish their reputations without making serious commitments to UN global governance objectives. In the end, they felt like they were able to achieve a balance between cultivating trust and ensuring independence.

Similar concerns about complicity were expressed by scholars who had embedded roles in policymaking and policy processes—but they were experienced differently. One worked on Russia policy in the US government beginning in January 2022. Another worked closely with the US Air Force collecting data on Afghanistan. Both reported worries about complicity and their determination to maintain an appropriate commitment to paramount concerns—the former to avoid WWIII and the latter to ensure their work was not used for human targeting. The first reported their interactions with policymakers as leading to their own learning. As they became personally vested in Russia's strategic defeat, their scholarly views changed in what they saw as a positive way as a consequence of their engagement. The second, on the other hand, very consciously resisted being drawn into the value judgements and operational incentives of those with whom they worked.

For the scholars experiencing the insider dilemma, their differing levels of confidence between social science-derived knowledge on the one hand and the quality of policy judgements

on the other led to different outcomes involving continuing, even deepening, versus ending engagement. The way that different scholars described how they experienced and navigated this dilemma reveals the particular importance of scholars' sense of the certainty of their own knowledge compared to their impression of the knowledge and ethics of their policy interlocutors.

2: The Integrity Dilemma

The second dilemma our engaged scholars reflected on involved navigating situations where policy actors pressed for a spin on research findings that reflected their political imperatives versus what scholars saw to be an honest reporting of their research findings. The problem arose both in one-off consultancies and in embedded settings.

For one scholar, this arose as they arrived in Iraq to assess how humanitarian workers navigate the ethics of working in conflict zones. They had established terms with the regional head of the organization with which they were working. Yet interference from the project manager on the ground combined with poor project design convinced them that they had no option other than to disengage entirely. The researcher specifically expressed the concern that the organization they were working with was 'deliberately asking questions in a way that does not allow any uncertainty or ambiguity or tension to come out of it… they knew well enough how to ask questions so that … they were just going to create the right data that gave the response [they wanted]'. The organization's unwillingness to embrace uncertainty in the research was a red flag for the scholar. Another experienced pressure to produce stronger findings than could be warranted given the time and resources available.[19] The pressure on this researcher came not from the policy client but from a third-party consultant the client had hired to manage research. Though they were able to work through to a satisfying result, they noted that it required a willingness to understand and work within a complex set of relationships.

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[19] The issue of unreasonable time constraints forcing scholars to reach judgments prematurely, based on inadequate data and analysis, was raised almost universally by engaged economists that George DeMartino surveyed (George F. DeMartino, *The economist's oath: on the need for and content of professional economic ethics* (Oxford: Oxford University Press, 2011). See, also, William R. Allen, 'Economics, economists, and economic policy: modern American experiences', *History of Political Economy* 9: 1, 1977, pp. 48–88.

Two others experienced pressures to shift their conclusions as they presented their research findings. One talks of this ranging from a fairly innocuous request to strike one paragraph to pressure to shift emphasis from less to more favourable findings to asking that they assert results that were not supported by their research. The second describes a more complicated set of issues when they were contracted by the United Nations Working Group (UNWG) on Human Rights. The scholar viewed their role as providing information relevant to the UNWG's policy; but the UNWG saw it as providing information to validate the policy path they were on. When the scholar publicly presented research relevant to, but questioning parts of, the existing policy the policy audience was disappointed and ended the engagement. While confident in their findings, the scholar also wondered whether better communication about their role would have led to a more productive engagement.

Yet another scholar reflected on embedded work with an NGO in Afghanistan to set up an experiment on the impact of cash pay-outs on government legitimacy. Although the results showed no improvements to legitimacy, people working with the NGO pointed to many changes in the country that could have still contributed to positive change. The scholar's certainty about the experimental design led them to believe that its results should have been more disruptive and demonstrated that the policy was not working.

For the scholars who discussed the integrity dilemma, a key strategy for managing it was acknowledging the possibility of competing research and organizational imperatives. Establishing incentives and clear lines of communication, as well as a willingness to share accountability and publicly communicate the implications of findings with a view to the organization's interests, can help to soften this dilemma. One potentially useful strategy for scholars that extends beyond good communication is pre-commitment, in which they establish and make clear to prospective clients just what they are and are not prepared to do in their engaged work.[20] Some scholars have adopted their own personal codes of conduct, which they make available to prospective clients.

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[20] George F. DeMartino, *The economist's oath: on the need for and content of professional economic ethics* (Oxford: Oxford University Press, 2011).

3: The Complexity Dilemma

The third dilemma involves policymakers turning to academics for simple, declarative answers that repress or ignore uncertainty even as engaged scholars recognize that reality is much more complicated. Many respondents reported seeing more complexity than could be easily addressed. This dilemma arose in arms-length engagement and in policy writing, as well as in longer term engagement with think tanks and policy communities.

One scholar describes encountering this throughout their career and writing specifically to counter simple narratives as a way of establishing room for more complexity in policy debates. Another similarly referenced the difficulty of even talking about the ethics of conflict given new practices and technologies that enable the lethal use of force outside the traditional warzones to which just war debates apply. They described their struggle to be explicit about moral contradictions in their work. To offer constructive guidance and not simply criticism, they developed 'two guiding assumptions … about what limited force should look like' to build in restraints and 'to stave off some of the potential abuses'. As they worked in this area, they felt one of their greatest contributions was developing a language that was more productive in speaking about the ethical issues surrounding the use of drones. A third discussed how language is crucial in engaging on responses to mass atrocities. They advocate, based on their research on the Rwandan genocide and recovery from it, for the use of first-person language instead of labels like 'genocidaire' or 'perpetrator', thus foregrounding the evil of an act instead of the evil of a person. They reflected how people working in spaces that have experienced atrocity 'are often deeply uncomfortable' about such language changes and that, in their experience, such recommendations must be made with caution and delicate considerations around context.

Another reflection brought up how the training we give to graduate students at professional policy schools affects the language and the concepts they use in their careers. When this scholar first began working on cybersecurity, they found many policymakers speaking about norms as something that could be pulled out of one's pocket and used instrumentally. The idea of norms as an intersubjective practice was something unfamiliar to many trained in the rationalist language surrounding neoliberalism and neorealism. In much of their engagement, they described a 'shared uncertainty' about the nature of a problem 'still up for grabs'. They described the policymakers they worked with as concerned to 'get up to speed' on the issue at hand and to

'get people to take the issue seriously'. They navigated these interactions by meeting people where they were and trying to ferret out where they wanted to go.

A similar strategy was used by a researcher to help address 'blind spots' as they engaged with practitioners on identity politics in the wake of George Floyd's murder. In helping people 'unlearn' common misunderstandings, they found that using academic language and social science tools like careful argument and evidence helped tamp down polarized reactions. They argued that 'trying to add different layers by giving new forms of information or new ways of thinking about data and as an intersectional black feminist … other ways of coming at the problem' were productive strategies for encouraging people to see more complexity.

Two researchers reflected on encouraging more complex and nuanced views among policy communities with which they were already deeply involved. One understood this as posing reputational difficulties for them if they moved too far away from entrenched perceptions too quickly. They carefully thought about how to present their work on a 'global NATO' to nudge the policy community toward a more complex, nuanced view of NATO but without seeming too far out of the mainstream consensus to be taken seriously. One of their strategies was to realize that a particular recommendation might never be accepted but 'the point in writing was to say we have to think about this issue in this institution in a different way'. The second scholar worked hard to create a complex, detailed report on the future of Afghanistan and the different options for US policy involving many stakeholders. They described using simple versions of formal models of strategic interaction to explore with some degree of certainty what would likely happen when the US withdrew its troops from the country. They also explicitly used scenarios to identify the more uncertain elements of potential pathways and the various implications. These efforts were ultimately unsuccessful; the report came up against incoming President Biden's simple, pre-formed narrative.

For scholars who reflected on the complexity dilemma, strategies for managing it included deliberate attention to language and context and a focus on understanding the goals of their policy interlocutors. These scholars also manifested a willingness to engage over the long-term with a policy community to help shape the language and goals over time. There is good reason to expect that most research will not generate the kind of clarity and certainty often

desired by policymakers and advocates. Conveying informed uncertainty effectively—by emphasizing context, contingency, and complexity—is an important skill for engaged scholars.[21]

4: The Conflict-of-Interest Dilemma

The fourth dilemma our respondents raised was around how engagement can present actual or apparent conflicts of interest. Some of the expressed concerns revolve around funding and other dimensions around ownership of research findings. Other concerns surround ethical interaction with local research partners and interlocutors during field research. This dilemma arose mostly in arms-length but also in other types of engaged research.

Accepting funding for research was the first manifestation of this dilemma. A scholar pointed out the obvious problem of doing research when funders expect or demand a particular result, but acknowledged that most situations are more nuanced. The same scholar noted that the source of funding can raise concerns as well. Government funding, from the US Department of Defense, for instance, can be suspect to some scholars, whereas for others it serves as a vote of confidence in one's research from a powerful actor. In the case of private foundations, the source of the funding that initially capitalized the institution can also introduce dilemmas for scholars. Some of the oldest foundations (e.g., those in the US whose assets derive from unsavoury or even morally indefensible actions) might raise concerns for some scholars. Others might argue that the time elapsed since the foundation was capitalized renders these concerns less important, especially if the funding is being used to support research that attempts to serve the public good. For foundations that have been capitalized more recently it may be more difficult to look away from the practices that generated the resources to the research that is being supported. This has been a particular concern given the inflow of money from the Koch brothers and other organizations that have also funded political projects. Ultimately the scholar who raised concerns about the source of funding encouraged others to think through their own boundaries and try to reserve judgement about others. Another researcher worried that ongoing consulting with commercial enterprises could be seen as a conflict of interest. One of their key strategies was to ensure distance from corporate entities by refusing to accept any corporate money.

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[21] Barma and Goldgeier, 'How not to bridge the gap', p. 1773.

Other concerns revolve around how the research itself is conducted and whether a scholar has ownership over any part of the research in the event of conflict with a client. One of our interviewees pulled out of their consultancy, but was nonetheless able to use some of the research generated with the approval they had secured from their university's Institutional Review Board. The complications of withdrawing from a research consultancy could be especially consequential for junior scholars who cannot afford to forego the publication of research in which they have invested time. Another scholar emphasized how crucial it is to invest time and care in pre-establishing, via written contracts specifically, ownership over research design, findings, and products.

Conflict of interest dilemmas in democracy research conducted with local interlocutors also came up in our interviews. One scholar emphasized that the imperative to get the right research setting and choose cases based on consistent theoretical criteria must be balanced against the necessity of gaining access and the responsibility to do this in a way that is safe for local research partners. A second scholar similarly expressed concerns about exposing local respondents, even anonymized, to potential retaliation by repressive states. They also discussed whether it was important to adjust language to gain research access to local interlocutors. For instance, the researcher wondered whether they should abandon politically weighted concepts like 'democracy'. Although they decided against this strategy to speak clearly to American policymaking audiences, they acknowledged the stresses this placed on local partners who necessarily worried about being seen as complicit in an American foreign policy agenda.

Scholars for whom the conflict-of-interest dilemma emerged spoke in different ways about the importance of creating distance from certain sources of funding, and of having clear terms of reference vis-à-vis research counterparts and other stakeholders. Several of the reflections point to how relationships between scholars, interlocutors, and other stakeholders (e.g., funders) shift over time, sometimes to the benefit of scholars.

As is clear from this brief discussion of four general dilemmas of engaged scholarship, our respondents—often explicitly—engage uncertainty and complexity in many aspects of their applied research and policy engagement. We emphasize that this pool is unlikely to be representative of engaged scholars more generally—in fact, we chose these respondents in part owing to our expectation that they would convey useful insights about the ethics of engagement in uncertain and complex conditions. We now turn to the matter of how different approaches to

uncertainty might inform responses to these dilemmas, as well as to the general lessons we draw from our investigation.

IV. Reflections on Engaged Scholarship in a Fourth World

We began this paper by imagining three worlds characterized by varying epistemic conditions. *We now imagine a fourth world in which engaged scholars and the decisionmakers they serve recognize and explicitly centre epistemic limits in their work given the fundamental complexity of the world in which they live.*[22] Here, scholars fit their epistemic expectations more closely with emerging ontological presumptions. They recognize that strategies implemented even by well-trained and virtuous actors will have unintended effects, some of them harmful— and that pursuing social betterment means taking on responsibility for anticipating and preparing for unwelcome consequences. Scholars, along with those they study and support, thus explore how to navigate responsibly the risks associated with acute limits to the known and knowable.

One could infer that the appropriate response to uncertainty is to avoid engagement with the world for fear of causing harm. We do not hold that view. It is a truism that not acting can also cause harm, especially when the status quo involves deprivation and misery. Instead, we explore in this section how engaged scholars can act responsibly in pursuit of social betterment, even in the face of the unknown and unknowable. We present three lessons that cut across our interviews—accept deep uncertainty; engage with stakeholders; and value description, narrative, and fantasy—and then discuss the Decision Making under Deep Uncertainty (DMDU) approach as an exemplar of a productive evolution to address uncertainty and complexity in confrontation with wicked problems. We offer these as starting points for future research and conversation about engaged scholarship in the fourth world that scholars who acknowledge uncertainties are attempting to build.

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[22] Our characterization of these four worlds is a heuristic device, distinct from the positing of alternative potential worlds that is common in scenario analysis. We note, however, that others have used the concepts of scenario analysis to similarly explore the evolving landscape in which publicly engaged scholarship takes place, e.g., Jordan Tama, Naazneen H. Barma, Brent Durbin, James Goldgeier, and Bruce W. Jentleson, 'Bridging the gap in a changing world: new opportunities and challenges for engaging practitioners and the public', *International Studies Perspectives* 24, 2023, 285–307.

Accept deep uncertainty

Economics is particularly illustrative of a shift toward appreciation of deep uncertainties, if only because over the past century economists were trained to believe that economic science was largely adequate to the task of knowing and, hence, controlling the economy. Abba Lerner's *The Economics of Control*, published in 1944, sent generations of economists into practice believing they could achieve the unachievable.[23]

Economists and political scientists today are expressing a new humility about the capacities of their respective sciences to know and control. Since the 2008 crisis, it is not uncommon to find it in statements of economists like that of Peter Orszag, Robert Rubin, and Joseph Stiglitz, who write: 'In our collective experience, fiscal policy should instead be informed by copious amounts of humility, particularly given the role of impossible-to-predict events (including pandemics, wars, and bubbles).'[24] Naazneen Barma's book on peacebuilding explores the fundamental unknowability and endogeneity of what might happen with any attempt at socio-political engineering. Barma delivers a critique of the positivist, probabilistic mainstream that purports to know certain things within some bounds of confidence.[25] Severine Autesserre goes even further, questioning how social scientists have conceptualized peace as well as how it unfolds and what scholars and policymakers can do to promote it. Reminiscent of sociologist Bruno Latour, Autesserre follows the actors, taking note of what people on the ground in different conflicts understand by peace and what they hope for from those who would help them achieve it.[26]

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[23] Abba Lerner, *The economics of control* (London: Macmillan, 1944); David Colander, 'Muddling through and Policy Analysis', *New Zealand Economic Papers* 37: 2, 2003, pp. 197–215.

[24] Peter R. Orszag, Robert E. Rubin, and Joseph E. Stiglitz, 'Fiscal resiliency in a deeply uncertain world: the role of semiautonomous discretion', Peterson Institute for International Economics Policy Brief No. 2 (2021), p. 2, https://www.piie.com/publications/policybriefs/fiscal-resiliency-deeply-uncertain-world-role-semiautonomous-discretion

[25] Naazneen H. Barma, *The peacebuilding puzzle: political order in post-conflict states* (Cambridge University Press, 2017). See also George F. DeMartino, Ilene Grabel, and Ian Scoones, 'Economics for an uncertain world', unpublished paper (2023).

[26] Séverine Autesserre, *The frontlines of peace: an insider's guide to changing the world* (Oxford University Press, 2021), Deborah Avant, Introduction to ISSF Roundtable 14-2 on Autesserre, *Frontlines of peace*, H-Diplo, https://networks.h-net.org/node/28443/discussions/10965072/h-diplo-issf-roundtable-14-2-avant-autesserre-frontlines-peace; Bruno Latour, *Reassembling the social: an introduction to actor network theory* (Oxford: Oxford University Press, 2005).

The engaged scholars we interviewed exhibit an awareness of epistemic limits, and the need for humility. The scholar we mention above whose experience references the way that their work in the US government shifted their perspective on the importance of defeating Russia in Ukraine provides one example. In the ethical engagement curriculum, Deborah Avant describes how parroting what political scientists thought they knew about the potential for regulating private security blinded her to what turned out to be promising regulatory pathways. Her experience participating in the multi-stakeholder efforts to reign in this industry has made her much more attentive to different processes through which governance can develop, which had been largely overlooked by the profession.

Innovative scholars are now pressing much further on the matter of epistemic limits. Some of these scholars are at the forefront of the complexity approach to social science. Brian Arthur, a leader in the field at the Santa Fe Institute, emphasizes dynamic features of the economy that present formidable limits to economic knowledge. He writes, 'the economy is not something given and existing but forms from a constantly developing set of institutions, arrangements, and technological innovations'.[27] While standard 'equilibrium' economics 'emphasizes order, determinacy, deduction, and stasis, complexity economics emphasizes *contingency, indeterminacy, sense-making, and openness to change*'.[28]

Complexity economics is generating tentative conclusions about 'causality' that deepen awareness of ineradicable uncertainties. Arthur describes the method this way: 'Complexity economics thus sees the economy as in motion, perpetually "computing" itself—perpetually constructing itself anew.'[29] What becomes of causal explanation under this approach? Explanation takes the form of a 'solution' that seeks to identify 'a pattern, a set of emergent phenomena, a set of changes that may induce further changes, a set of existing entities creating novel entities', where the goal is not the discovery of universally applicable theorems, 'but the deep understanding of mechanisms that create these patterns and propagations of change'.[30]

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[27] W. Brian Arthur, 'Complexity economics: a different framework for economic thought', Santa Fe Institute Working Paper #13 (April 12, 2013), p. 1, https://www.santafe.edu/research/results/working-papers/complexity-economics-a-different-framework-for-eco.

[28] W. Brian Arthur, *Complexity and the economy* (New York, Oxford, 2013), p. 19, emphasis added.

[29] Arthur, *Complexity and the economy*, p. 1.

[30] Arthur, *Complexity and the economy*, p. 19.

Central is the emphasis on non-equilibrium, which emerges not just from external shocks but also endogenously, from circumstances and processes that define the economy.

The consequences of this worldview for theorists and engaged scholars are dramatic. Here, decisionmakers confront a world characterized by complex systems and wicked problems. In this kind of world, the idea of finding optimal strategies and outcomes is quixotic. Arthur notes, 'To the degree that outcomes are unknowable, the decision problems they pose are not well defined. It follows that rationality—pure deductive rationality—is not well-defined either, for the simple reason that there cannot be a logical solution to a problem that is not logically defined.'[31] We are not suggesting that causal logic is of no use, but that the domain in which it provides adequate guidance is not always well defined in advance, and so the use of causal models can mislead. In the excitement of modelling causality with an eye to confronting an important policy challenge, it is easy to lose sight of the fact that our models necessarily engage assumptions and are therefore always fallible. Scholars should thus foreground humility and alert stakeholders to uncertainty about the assumptions they employ. Among 20th century social scientists, perhaps no one better grasped the point than Albert O. Hirschman. As the epigraph that begins this paper demonstrates, Hirschman warned of the potentially problematic fallout from the social science hunt for, and implementation of, comprehensive programs of social engineering in what he understood to be an ineluctably complex social world.

Engage with stakeholders

Foregrounding uncertainty underlines the scholarly mission to facilitate collaborative exploration with stakeholders that seeks to reveal possible causal connections and possible futures, rather than to impose a scientifically warranted singular truth on them. We see this in several reflections on the process of trying to change things from the inside, where the scholars sought to help decisionmakers shake off narrow preconceptions that blocked learning and consideration of new ideas. The results of our respondents' efforts were mixed in this regard.

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[31] Arthur, 'Complexity economics', p. 4. [31] Behavioral economists, too, have hammered home the idea that real agents in the economy are not rational in the way presumed by 20th century neoclassical economics. But the approach does not open up the door to uncertainty. Instead, the methods are designed to figure out 'predictable rationality', as Dan Ariely's canonical text by that name indicates. Dan Ariely, *Predictably irrational, revised and expanded: The hidden forces that shape our decisions* (New York: HarperCollins, 2009).

One scholar was not sure their interlocutors were as open to learning as they had hoped. Another, though, found those they engaged with more open to learning. Still another, similarly, found the businesses they engaged with open to learning about their potential public roles. One reflection describes their engagement as akin to therapy sessions, helping policymakers think though their respective concerns. Several pointed out the way that academic language can help people find some space from their initial political reactions, which can allow greater potential for learning and exchange. But the exchange must be seen as two-way. One reflection centres a growing trend toward applied research 'co-created' by scholars and practitioners, whereby the desire to engage responsibly leads to partnered approaches to research design, conduct, and dissemination.[32]

This kind of interaction may be more available to scholars who engage with policymakers more closely. Though we initially surmised that ethical dilemmas would compound with closer engagement, in some instances greater collaboration can ease tensions. More embedded forms of engagement might lead to a more fluid learning dynamic between scholars and policy interlocutors, thereby making it easier to navigate tensions than in more isolated instances of engagement where the scholar–interlocutor relationship does not build over time.

Value description, narrative, and fantasy

An important shift is underway in how we are urged to think about our social scientific enterprises. We refer here to the shift in orientation toward social science as the construction of 'narratives' rather than the discovery of unassailable truths. Centring uncertainty suggests a rebalancing of attention to appreciate the importance of 'description' to both useful theorization and to productive academic engagement.[33]

Narratives drive how people understand their experience and thus whether descriptions are seen as 'accurate'. Narratives drive agents' engagement with the world, shaping their beliefs and behaviours in directions that do not accord with more abstract notions like the rational actor

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[32] See Susanna P. Campbell, 'Dapo Oyewole, and Haley J. Swedlund, 'Bridging the gap between research and policy: lessons from co-creation in the aid sector', *Duck of Minerva* online (June 3, 2023), https://www.duckofminerva.com/2023/06/bridging-the-gap-between-research-and-policy-lessons-from-co-creation-in-the-aid-sector.html

[33] Deborah Avant, 'The role of description', in Jennifer Cyr and Sara Wallace Goodman, eds., *Doing good qualitative work* (Oxford University Press, 2023).

model, which has grounded economics and much of political science for over a century.[34] Contemporary scholars have rediscovered the insights of economists like G.L.S. Shackle, who argued (rightly in our view) that economics should be understood as a study of ideas, not of objective categories like prices and GDP. 'Economics is about thoughts. It is therefore a branch or application of epistemics, the theory of thoughts.'[35] Dani Rodrik picks up the thread: 'Yet without ideas … the concept of self-interest is empty and useless. … In truth, we don't have "interests". We have *ideas* about what our interests are.'[36] Pragmatists concur, turning the story of interests and ideas on its head by arguing that neither are set ahead of time but are settled in specific situations.[37]

These scholars suggest how academic narratives not only describe the world but shape it—often in unpredictable and deeply performative ways.[38] Notably, both Shiller and Rodrik assign some blame for the financial crisis of 2008 to the stories economists told about the efficiency of financial markets. Shiller writes,

> This mania was the product not only of a story about people but also a story about how the economy worked. It was part of a story that all investments in securitised mortgages were safe because those smart people were buying them … To a remarkable extent we have got into the current economic and financial crisis because of a wrong economic theory—an economic theory that itself denied the role of the animal spirits in getting us into manias and panics.[39]

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[34] Deirdre N. McCloskey, *The rhetoric of economics* (Madison: University of Wisconsin, 1985), Robert J. Shiller, *Narrative economics* (Princeton: Princeton University Press, 2019); Jens Beckert, *Imagined futures* (Cambridge: Harvard University Press, 2016), and Frederick W. Mayer, *Narrative politics: stories and collective action* (Oxford: Oxford University Press, 2014).

[35] G. L. S. Shackle, *Epistemics and economics: a critique of economic doctrines (*Reprint, New York: Routledge, (1992 [1972], xx).

[36] Dani Rodrik, *Straight talk on trade* (Princeton: Princeton University Press 2017): pp. 159, 163. (Cf. Frank H. Knight, *Risk, uncertainty, and profit* (Reprint, Chicago: University of Chicago Pres 2014 [1921]), Chapter 7; Shackle *Epistemics and economics* (1992[1972], xx)).

[37] Louis Menand, *The metaphysical club: a story of ideas in America* (New York: Macmillan, 2001), p. xi.

[38] Other scholars who have contributed much to our understanding of the performative force of social science narratives include Albert O. Hirschman, and more recently, JK Gibson-Graham, and Stephen Resnick and Richard Wolff.

[39] Robert Shiller, 'A failure to control animal spirits', *Financial Times* (May 12, 2009), https://www.ft.com/content/453e55ca-0c0c-11de-b87d-0000779fd2ac. See also George F. DeMartino, 'The economic crisis and the crisis in economics', in Martha Starr, ed., *Consequences of economic downturn: beyond the usual economics* (New York, NY: Palgrave Macmillan, 2011), pp. 25-44.

Nor should we forget the relevance of imagination. Indeed, making causal claims entails specifying counterfactual claims. As Tetlock and Belkin claim: 'we can avoid counterfactuals only if we eschew all causal inference and limit ourselves to strictly noncausal narratives of what actually happened (no smuggling in causal claims under the guise of verbs such as "influenced," "responded," "triggered," "precipitated," and the like)'.[40] But counterfactual worlds exist only in our imaginations—and so our causal claims about *our actual world* depend on the veracity of claims made about *imaginary worlds* that exist only in our minds. For instance, the over-worked question, 'Would WWI have occurred had the Archduke Ferdinand not been assassinated in Sarajevo in June of 1914?' can be adjudicated only by specifying what would have happened in an alternative world in which the Archduke was not assassinated. But of course, that alternative world was foreclosed the moment that the assassination occurred—it can exist, then, only in our imaginations.[41] How we imagine our world can be important for the options we entertain for dealing with it, as one of our interviewee's recounts in their reflection on trying to encourage a broader view of what NATO could be.

One productive model: DMDU

Economist Edward Leamer brings together these lessons in the introduction to his recently published macroeconomic textbook, where one would normally expect a stout defence of the scientific credentials of economics, which for a century held itself to be the physics of the social world. He instead speaks of economics as storytelling.

> You may want to substitute the more familiar scientific words 'theory and evidence' for 'patterns and stories'. Do not do that. … The words 'theory and evidence' suggest an incessant march toward a level of scientific certitude that cannot be attained in the study of complex, self-organizing human system that we call the economy. The words 'patterns and stories' much more accurately convey our level of knowledge, now, and in the future as well. It is literature, not science.[42]

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[40] Philip E. Tetlock, Philip E. and Aaron Belkin, eds. 1996, *Counterfactual thought experiments in world politics: logical, methodological, and psychological perspectives* (Princeton: Princeton University Press, 1996), pp. 3–4.

[41] For a more detailed examination of the role of fictional counterfactuals in the hunt for causality in economics, see George F. DeMartino, 'The specter of irreparable ignorance: counterfactuals and causality in economics', *Review of Evolutionary Political Economy* 2, 2021, pp. 253–276.

[42] Edward E. Leamer, *Macroeconomic patterns and stories* (Heidelberg: Springer, 2009), p. 3.

It is hard to overstate how fundamental is the shift that Leamer's claims represent. Today's epistemically self-aware economists are projecting an image of economics as a far humbler intellectual enterprise that seeks to promote social betterment in a world that defies adequate understanding. Leamer and others warn us against expecting social science wizards to know the unknowable, or to control the uncontrollable.

Engaged scholars and practitioners have begun to put this advice into practice. One community of practitioners is leading the way—those engaged in what is called 'Decision Making Under Deep Uncertainty', or DMDU.[43] DMDU foregrounds the epistemic problem we have explored here. It presumes deep uncertainty regarding the nature of the systems that drive events in the world (and how those diverse systems interact), the models that are constructed to map those systems, the agents who will be affected by policy choices and how those agents' values will evolve over time, and the innumerable contingent factors that condition the world in which any policy decision will take effect. It therefore steers clear of the standard approaches by which engaged scholars often seek to inform decision making. DMDU rejects the 'predict then act' model that characterizes standard policy advocacy, which seeks to find the optimal policy given a probabilistically knowable future. Instead, it looks to discover policies that are apt to be 'robust' across a very wide range of possible futures. The strategy involves testing particular policy proposals via simulations against many thousands of possible future worlds, each characterized by adjustments in the inputs, parameters, and functional forms of the models used to run the simulations—while refusing to assign probabilities to those possible futures.

A central element of DMDU is the emphasis placed on incorporating stakeholders—those who will be affected by adopted policies—directly and meaningfully into policy deliberations. Stakeholders are involved with DMDU experts in brainstorming over possible policy solutions to pressing problems, providing expertise about what are taken to be the relevant systems that will bear on a policy's effects, assessing policy options for their apparent robustness, and choosing which risks to take in pursuit of which social goals. In a world of adequate knowledge, this engagement would be inefficient and unnecessary. But in a world characterized by deep uncertainty, stakeholder engagement elicits the Hayekian tacit knowledge that diverse actors

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[43] The reader interested in learning about this approach should consult Vincent Marchau, Warren E. Walker, Pieter J. T. M. Bloemen, and Steven W. Popper, eds., *Decision making under deep uncertainty: from theory to practice* (Heidelberg: Springer, 2019) and the website for the Society for Decision Making Under Deep Uncertainty, https://www.deepuncertainty.org/.

carry, without which decisionmakers are apt to make avoidable, damaging mistakes. Stakeholder engagement also conveys respect for those who stand to be harmed by any decisions taken. Rather than the economist deciding for the community which risks of harm are appropriate to impose on some for the benefit of others, here the stakeholders themselves make the critical judgments.

Once a chosen policy is implemented, the same community of experts and stakeholders then monitor the world as it evolves and look to adjust policy to enhance policy robustness. Here there is no 'end' to policy engagement in confrontation with a wicked problem. Instead, a diverse community of actors remain engaged in monitoring and adjustment. Finally, the approach involves responsibility on the part of the DMDU experts. Unlike in arms-length, one-off engagement, such as when an economist is hired to produce a cost-benefit analysis of a particular policy dilemma, here the expert remains engaged. Experts have what Nassim Taleb calls 'skin in the game', where they must confront the consequences of their decision and engage directly with stakeholders suffering the consequences of prior decisions.[44] That kind of engagement is apt to overcome the problem of disengagement that too often leads to the construction of the 'blasé' who sleep well at night while others face harm.[45]

DMDU is not a panacea—it cannot tame wicked problems and it cannot eliminate risk of severe damage from decisions taken when confronting them. Its chief virtue is ethical. DMDU practice confronts honestly, with stakeholders and decisionmakers, the limits to expert knowledge; and it replaces a paternalistic ethic in which the expert is thought to know best with an ethic that emphasize the integrity and agency of those experts purport to serve.

V. Conclusion—Fourth-World Pedagogy

We are advocating here for the fourth world. As our interviews with engaged scholars, and our discussion of recent literatures and strategies reveal, we have many ingredients for better understanding of the limits to academic (and other) expertise and the bounds of our ability to control a complex world. We find many epistemically aware scholars and practitioners shifting

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[44] Nassim Nicholas Taleb, *Skin in the game* (New York: Random House, 2018).

[45] The concept of the blasé self appears in Andrew Linklater, *The problem of harm in world politics* (Cambridge: Cambridge University Press, 2011), p. 226.

gears toward new kinds of engagement that foreground uncertainty and that seek to engage stakeholders in partnerships where they can help navigate policy decision-making in a world where even robust decisions might cause harm.

But we have been on this precipice before. Pragmatic scholars like Jane Addams, John Dewey, William James, and Charles Peirce made many of these arguments at the beginning of the 20th century. Albert Hirschman's work, too, was epistemically and ethically self-aware.[46] And yet, our professional practice and public discourse often presume adequate scholarly knowledge of a knowable world. Our textbooks, our methods training, our professional literatures together conspire to deliver a message that we know the unknowable and we are rewarded richly for this illusion—in policy influence, privileges of professional self-governance, income, and status. Each of these factors represents a powerful obstacle to the transformation from our third world, in which scholars confront an opaque world but think they confront a knowable world, to the fourth world we advocate here.

Where are we to begin? Moving toward this fourth world requires shifts in how we train and reward new scholars and, equally, how we train students heading for non-academic careers who will use the language of scholarship in their professional lives. Fourth-world pedagogy would teach what Wendell Berry describes as the 'way of ignorance'.[47] The pedagogy would foreground questions concerning what we don't know and perhaps can't ever know, despite our best efforts and the best research techniques. That pedagogy would tease out the implications of irreparable ignorance for what scholars can and cannot deliver in pursuit of social betterment.[48] Equally important, that pedagogy would instruct current and future decisionmakers and other stakeholders about what should and should not be asked of scholars. Moving to this kind of pedagogy entails the unwelcome but necessary task of pushing back against the intoxicating presumption of knowing the unknowable and controlling the uncontrollable. For us, and for many other scholars today, making that transition is a pressing ethical duty as we seek to act responsibly in an inscrutable world.

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[46] It is striking how much Hirschman anticipates the recent turn in economics away from theorizing the economy as an essentially simple, self-contained system toward recognizing it as an adaptive, complex system. See, e.g., Wolfram Elsner, 'Complexity economics as heterodoxy: theory and policy', *Journal of Economic Issues*, 11: 4, 2017, pp. 939–78.

[47] Wendell Berry, *The way of ignorance* (Emeryville: Shoemaker and Hoard, 2005).

[48] DeMartino, *The tragic science*.