Uncertainty and the use of interdisciplinary insights in complex decision-making

Good morning, everyone. I want to take a wide-angle philosophical lens to examine some basic challenges facing all policymakers aiming to ‘follow the science’ and base decisions on ‘the evidence’.

Let me start with the challenge of complexity. By complex here I mean three things: reality is extremely intricate and difficult to compute; it is also multi-faceted, so that it’s not possible to consider all its aspects at once; and, lastly, it’s complex in the more technical sense that patterns emerge that are hard to explain in terms of the recent past or constituent parts. Now science is our best tool for coping with these forms of complexity but only when used with care.

This is because all scientific methods are selective: they focus only on certain aspects of multi-faceted reality – some on biological aspects, others on social etc. Indeed, the main value of any scientific or analytical method is to abstract from complicating factors and isolate systematic tendencies. Scientific conclusions are presented with the caveat that other factors remain equal and can therefore be safely ignored. But in the complex world of policymaking, other things are rarely equal. This means that when you’re applying scientific findings to particular problems, your first challenge is to assess whether the ‘other things remaining equal’ clause in the relevant model remains a safe assumption. And, for this you need to assess the potential relevance of a range of scientific perspectives that may illuminate aspects of a problem that have so far been ignored.

To be clear: there can never be a single scientific method that encapsulates all aspects of reality that might matter. This means that evidence-based policy should begin with a multi-disciplinary audit of the nature of the problem you’re concerned with – examining it from different disciplinary perspectives. This helps ensure that a rounded initial assessment of the problem drives the choice of appropriate method rather than a preferred scientific method determining how you see the problem. I call this interdisciplinary approach to research or policy design ‘disciplined eclecticism’.
When dealing with many real-world problems, the art of good policymaking also involves reversing the *abstraction* from the complex interaction of different factors that any particular science must engage in, while combining the findings of different scientific methods, to make a *holistic* assessment of the messy particular case.

As a policymaker you face another challenge, too: you must keep *analytical* findings about the potential impacts of different policy options separate from *value* choices about which goals to prioritise. The business of science or data analysis is to explain what the nature of some aspect of reality *is*. It cannot tell you what you *ought* to do with that knowledge. That normative question is the province of ethics and political choice.

As a policymaker you must also avoid assuming you can duck controversy by delegating decisions to the ‘science’ or the data – as if data are some entirely objective touchstone for solving dilemmas. This is rarely the case for two reasons: first, because many policy dilemmas are at root ethical dilemmas about how to balance different incommensurable goals – for example, how to balance safeguarding the health of the elderly against the learning prospects of the young. More fundamentally still, scientists and statisticians never have direct access to brute reality. Rather, their way of seeing the world is mediated by the particular disciplinary languages, conceptual grids, and data collection methods they use. The data scientists analyse – and the facts upon which governments base their decisions – are partly constructed by particular theoretical frames as well as the data sets available. This means that, while policy ideas should always be stress-tested against data, the data themselves must be evaluated in the light of alternative scientific frames or data sets and their pertinence carefully judged. Most data should be seen as provisional, partial, and subject to revision.

When you are seeking to model or influence *social* behaviour, the challenges with data-driven policy are greater still. For then you need to make sense of a *pre-interpreted* world – that is, you have to take into account the context-specific *interpretations* of reality that are actually motivating people’s decisions. This was one reason why Friedrich Hayek was critical of the use of aggregate statistics by economists and social planners: using them assumes
that what matters can be codified and quantified and assessed in a centralised manner; whereas Hayek argued that the data that matters for explaining socio-economic behaviour are the subjective assessments, opinions, and tacit knowledge of local actors – the things known only to the people whose behaviour you try to explain. Similar reasoning lies behind the emphasis placed on focus groups in helping design policy or, in the Bank of England’s case, on regional agencies as a way of accessing the stories shaping beliefs and behaviour.

But what about the great uncertainties we face? Surely, here big data are your friend. Well, in one sense: yes. The explosion of computing power, digital data, and artificial intelligence do help dramatically overcome our natural inability to scan and compute otherwise unfathomable intricacies of the past. But there is another kind of uncertainty – your inability to understand the future yet to be created. And here data are less of a panacea. Much of the faith in ‘big data’ is based on the assumption that patterns in past data are a good predictor of future behaviour. But this assumption ignores the extent to which the innovation and constant novelty central to capitalist systems introduce a basic indeterminacy that ensures that the future is rarely a statistical shadow of the past. It follows that your focus as a policymaker should often be on using models as diagnostic tools for spotting new patterns in real-time data rather than spending millions on trawling huge existing data sets in the hope of being able to extrapolate the future from patterns in the past. And part of the real-time data you should assess are the narratives, stories, and novel visions of the future motivating key players and the public at large.

So, let me sum up by referring to the wise advice of the legendary thinker, Isaiah Berlin, in his book, The Sense of Reality. Berlin concluded that the ‘art of governing’ is something quite different from scientific knowledge. It involves the ‘insight’ needed to understand the interplay between the different relevant aspects of reality captured by different scientific disciplines. Governing shares with science a need for humility about how much is known and the requirement for constant improvisation and trial and error. But ultimately, governing is an art involving judgment (rather than proof) and a sensitivity to what Berlin calls ‘the dark mass of factors ... whose precise interrelations we cannot formulate.’ Good government involves combining the generalisable and testable findings of different scientific disciplines with an understanding of a particular situation in its full uniqueness.
Now I do not underestimate the political challenge of such a nuanced use of science. As Berlin was the first to admit, nuances can be a nuisance; they are difficult to articulate and may lead to confusion. But, without a nuanced approach, policymakers are doomed to be constantly tripped up by the messy complexity of life.

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References:


