

PHD THESIS SUMMARY:
Uncertainty for Uncertain Decision-Makers

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Between political instabilities, the looming effects of climate change, and the insurgence of a viral pandemic, we face great challenges as communities, societies, and species. During uncertain times, the importance of experts in our collective decision-making increases as we want to learn as much as possible about our difficult circumstances in order to implement effective measures to face whatever is going on. Yet, our need for trustworthy information may hide the risk of over-relying on experts. The challenges we face are complex issues, the resolution of which requires both empirical knowledge and value judgements. If our uncertainty covers both but we rely on scientists to find resolutions, we are leaving it to the scientists to make value judgements too. Then, over-relying on experts can lead to shielding policy makers from their responsibilities, and to nourishing anti-science positions perceiving the political content of scientists' opinions.

This dissertation is an attempt to understand what sort of uncertainty decision-makers face, and to explore the implications of this analysis for private and public decisions: my main thesis is that there is a plurality of types of uncertainty, not all of which can be reduced through acquiring more evidence.

The first chapter is devoted to a theoretical account of uncertainty and of its variability. In mainstream decision theory (specifically, the tradition following loosely von Neumann and Morgenstern 1944 and Savage 1954), uncertainty is expected to vary only in terms of severity, and the standard probabilistic treatment has been expanded accordingly to tackle increasingly severe types of uncertainty. But this approach assumes that uncertainty only concerns how things are, whereas there is a variety of doubts that agents can face in their decisions and that go beyond that. Building on Makins (2021), I propose that we understand uncertainty as a matter of conflicting reasons to hold alternative attitudes, which means that it arises when there is some disagreement and that its resolution

requires the resolution of this disagreement. But given that in some cases this disagreement can persist even under ideal conditions, then in those cases the improvement of these conditions—for instance, with the collection of new evidence—cannot be expected to lead to the resolution of the uncertainty. On this account I construct a typology of uncertainty, identifying the conditions under which it is grounded in radical disagreement and retracing the role that these radical uncertainties can play in decisions.

Among those at play in decisions, one which has received relatively little attention is uncertainty over how the decision is modelled. Typically, decision theories require agents to model their situation identifying a set of alternative options, a set of possible states, and a set of consequences. But what should be included in each of these sets is neither uncontroversial nor inconsequential, given that different models of the same decision may lead to different results. The agent may leave something out because they are unaware of its possibility, but also because they do not deem it to be relevant to their decision. While the concept of unawareness has started to attract some research, the notion of relevance is still poorly understood. My second chapter is devoted to clarifying its importance in decisions and to propose a possible interpretation of its meaning.

The last two chapters try to apply to policy making the analyses developed in the first two. In chapter three I use some of the uncertainties proposed in my typology to identify the boundaries of expertise in policy decisions. Understanding these boundaries is critical to provide an assessment of the so-called ‘Evidence Based Policy’ movement, an important trend in development economics that aims to increase the quality of policy making by focusing not on ideologies but on the testable effectiveness of different measures. While the appeal of the movement rests on an idea of experts as impartial scientists that only provide evidence to decision makers, their practice often pushes experts to provide opinions on the policy decision as a whole, thus overstepping the boundaries of the uncertainties over which they have epistemic authority. I illustrate this mechanism with the example of a scholastic policy implemented in India, which has been first tested and then actively supported by researchers.

Finally, chapter four tackles the recent COVID-19 pandemic, as a case in which severe and complex uncertainties made timely, effective policy making particularly difficult. But rather than taking the uncertainty as a reason to delegate policy-making to experts, I argue that different types

of uncertainty all provide reasons to make our collective decision making more inclusive, especially with respect to marginalised groups.

In conclusion: there is more to uncertainty than ignorance about how things are or will be. Uncertainty is plural, as it can concern a variety of aspects and show different properties. It can concern values and priorities, making it not entirely susceptible to being reduced with empirical methods. But while the focus of the thesis is on this plural uncertainty, there are two other recurring themes that it may be helpful to highlight here.

The first is the concept of relevance: besides having its own dedicated chapter, relevance plays a crucial part in model uncertainty. What is deemed relevant has implications not just for individual, but also for collective, public, and even scientific decision making. Overlooking something important and wasting resources on confounding factors are sins of relevance, and understanding the mechanisms of relevance can only help in treating and avoiding them. The second theme is the role of reasons in decision making. Even though I do not devote a specific chapter to reasons, these are central to my accounts of both uncertainty and relevance. The importance reasons have in deliberation is undeniable—and yet, works bridging the philosophy of reasons and decision theory are still very sparse. Hopefully, this thesis on uncertainty can contribute to shed some light on the connections between relevance, reasons, and decisions as well.

REFERENCES

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Malvina Ongaro is a postdoc researcher at Politecnico di Milano. She obtained her PhD in 2022 from the Università del Piemonte Orientale, where she worked mainly in decision theory and philosophy of economics. Her current interests include models of natural risks, multi-criteria decision making, and cost-benefit analysis.

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