Is the Sky the Limit? Risk, Uncertainty, and Nature

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The official motto of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) is "Science and policy for people and nature." Photo from the World Wild Fund for Nature's "The Living Planet Report 2018"

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PROFILE

By Sylvain Maechler

The Living Planet Report 2018, published by the World Wild Fund for Nature in collaboration with the research division of the Zoological Society of London, recently valued nature at an estimated US$125 trillion.

The International Organization for Standardization (ISO), the self-proclaimed international standard setter bringing public and private actors together, is currently setting standards to help organizations monetize their environmental impacts and undertake what is often referred to as an environmental cost-benefit analysis (ISO 14007 & ISO 14008).

Unsurprisingly, the "big four" accounting and auditing firms — Deloitte, Ernst & Young, KPMG, and PricewaterhouseCoopers — are also developing methodologies to identify, quantify, value, and compare the environmental impacts of multinational corporations.

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These examples reflect a growing tendency of markets to transform environmental data into monetary units. Such developing accounting tools aim to quantitatively model and better objectify the present and future state of nature. This is what is generally referred to as natural capital accounting methodologies. Their ultimate rationale is to calculate and identify risks related to the environment and transform them into tangible business opportunities.

My research explores how markets anticipate the future, with a particular focus on the environmental crisis and the tools developed to assess its various unintended consequences. Such anticipation is made possible by transforming an uncertainty into an objectified — and often quantified — risk. But is such a transformation actually feasible, or are there both epistemic and ontological limits in the substitution of quantitative risk for uncertainty?

Epistemic limits relate to the ability to produce the required knowledge to turn uncertainty into risk. For instance, neoclassical economics sees no epistemic limit in such transformation, as estimations of utility functions rest on the assumption that economic actors have perfect knowledge — the so-called "omniscient individual." Ontological limits relate to the possibility that any uncertain phenomenon that could occur in the future can be turned into a well-defined set of objectified instances for market purposes. Here again, neoclassical economics sees no limit regarding the ontology of the marginal utility function enacted in the behaviour of rational individuals facing an uncertain future.

In contrast, international political economy and economic sociology recognize an epistemic limit in the ability of markets to substitute risk for uncertainty. Yet, they usually do not see any ontological limit, as studies take for granted the ability of powerful actors to produce whatever tools are required for substituting risk for uncertainty.

Our appraisal of ontological limits draws on the theoretical framework of one of the founders of the so-called "old" Chicago School — the institutional economist Frank H. Knight and his book *Risk, Uncertainty and Profits (1921)*. Knight points out that some situations — called true uncertainty — are too unique to be measured by statistical calculus and quantitative reasoning. They thus call for "judgment," "common sense," or "intuition."

Against this background, Knight provides a toolbox to reduce uncertainty non-quantitatively through expert knowledge, arguing that some individuals are better equipped than others to predict the future. In contrast to Knight's view that expert judgement is the most appropriate tool to face true uncertainty, the knowledge brought into play for anticipating the future is doomed to fail if not co-produced by a large range of actors.

Some international initiatives producing risk and biodiversity assessments have recognized the importance of what we call a "pluralization of knowledge." For instance, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), under the auspices of the United Nations, has the official motto "Science and policy for people and nature." Their reports especially recognize the plurality of nature's values, both qualitative and quantitative. They also acknowledge the diversity of forms of knowledge needed, including governments, civil society organizations, indigenous people, and local communities.

While power asymmetries between actors remain within this platform, this clearly reflects a claim to better include a larger range of participants for efficient biodiversity assessment and environmental valuation. Similarly, the United Nations International Strategy for Disaster Reduction (UNISDR) was one of the first initiatives to recognize the importance of indigenous and local knowledge in disaster reduction policy. It is, however, worth noting that from an instrumental perspective, such pluralization of knowledge also serves a political legitimation function through a wider acceptance of their results.

While markets are currently dealing with the environmental crisis and its various unintended consequences — what environmentalist Norman Myers described more than 25 years ago as "environmental unknowns" — it is

important to keep in mind the complexity of natural systems and the limits of both quantitative models on one side and human knowledge on the other.

If the sky is thus not the limit, then a projection into the future remains possible through our collective ability to pluralize knowledge. In other words, the only way to share the planet going forward will be to share our knowledge about it as well.

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