

Acceptance speech

18 June 2026

Nancy Lynn Cartwright, awardee in the Humanities category (18th edition)

I want to thank the BBVA Foundation for this wonderful honour, the committee that selected me and those who nominated me. I also want to thank my family and all the teachers, mentors, students, friends and colleagues who have supported my career and taught me how to do it better. And I want to thank the extraordinary interdisciplinary teams I have worked with.

About the work itself –

I began my career at Stanford in the philosophy of physics, joining a talented international community focused on the structure and interpretation of physical laws: how should we interpret the abstract equations in quantum theory or general relativity and how can we make them consistent? I loved physics not for its elegant theories but because it can help change the world. For instance, quantum mechanics was essential for developing lasers used in eye surgery and superconductors used in Magnetic Resonance Imaging.

The standard story then – still influential – was that laws describe what's really happening, everywhere. The behaviours of lasers and MRIs are just detailed instances of these laws. But I couldn't make this account fit how laws are used in building successful models of working devices. Rendered as universal claims, the laws do not get it right. They're adjusted, corrected, supplemented, ignored, and contradicted. Sometimes they're central, sometimes not. Successful models are not derived from high-level laws. In making things work in the world, **we use** laws. We use laws in many different ways, combined with many different forms of knowledge to produce blueprints for successful lasers or MRI machines.

This was the argument of my first book, *How the Laws of Physics Lie*. It was not a criticism of laws but a plea for a more realistic understanding of how they work for us. If we want better ways to use physics to change the world, we need to understand how it is used, both when it succeeds and when it fails.

This idea goes beyond physics. For a long time, studies of science focused on theory and experiment. I think part of my work's importance was to help launch a different approach that has since become influential: the study of science not as an abstract ideal but science as it is practised.

Another significant development at the start of my career was the re-legitimation of causation. At the time, philosophy – and much of science – was dominated by positivism and behaviourism. Both treated causal talk as empty, even pernicious. A number of us rebelled. Causal knowledge is essential for effective strategy, policy planning and prediction. Understanding what can and cannot cause what – and how we learn that – is imperative.

Positivists argued that causation was too loose a notion for science, lacking solid criteria for application. This led to my long-term project of mapping out defensible procedures for measuring causes: procedures that we can show yield a reliable judgement – yes or no – on claims such as “X causes Y in these circumstances,” much as a thermometer can determine whether a body temperature is 36 degrees. That is the project my fellow “new causalists” and I pursued. I believe we have now shown, across a range of methods in the social, medical and natural sciences, that if conditions are met and procedures followed, we get a trustworthy outcome.

A final area where I hope my work has mattered is evidence-based policy. I believe the humanities are valuable in themselves, but also that they can, and should, be practically useful, especially philosophy. Philosophers have studied evidence and objectivity for centuries, developing nuanced understandings different from those of researchers studying miners' lung disease or statistical methods for bias adjustment. But philosophical insights cannot be just dropped into practice. Progress comes when philosophy works with other expertise, including scientific and local experiential knowledge, to determine what objectivity demands in a specific case or what counts as good evidence that a policy will work.

This is what I've tried to do – with teams of others. Together the teams I have worked on have contributed across many practical areas of evidence-based policy: education, child protection, development economics, medicine and public health, and criminology.

I end with a plea for interdisciplinarity. Nothing in science or philosophy does serious work on its own. Reliable achievements – whether a new law, device, concept or method – depend on many different forms of knowledge and methodology woven together. It takes a village to build an operating laser, a successful medical intervention or a reliable social policy.