Appendix A: Kant’s Empirical Problems
“If $x$ causes $y$, then there is some universally valid law connecting $X$s to $Y$s. So, if my will is the cause of my $\varphi$ing, then $\Phi$ing is connected to the sort of willing I engage in by some universal law.

But it can’t be a natural law, such as a psychological, physical, chemical or biological law. These laws, which Kant thought were universal too, govern the movements of my body, the workings of my brain and nervous system and the operation of my environment and its effects on me as a material being. But they cannot be the laws governing the operation of my will; that, Kant already argued, is inconsistent with the freedom of my will in a negative sense...”
“So, the will operates according to a universal law, though not one authored by nature, but one of which I am the origin or author. Thus, Kant argues, a rational will, insofar as it is rational, is a will conforming itself to those laws valid for any rational will” (Johnson and Cureton 2019, Section 10).
“The law of cause and effect operates only in the realm of nature (the empirical realm).

Freedom, however, belongs, not to nature, but precisely to that ‘intelligible’ or transcendental realm to which categories like causality do not apply” (Scruton 2001: 75).*
Kant’s view rely on the argument that there is “a very special kind of harmony between the capacities of the knower and the nature of the known... [And] it is because of this harmony that a priori knowledge is possible” (Scruton 2001: 34; interpolation is mine).

“Previous philosophers had taken nature as primary, and asked how our cognitive capacities could lay hold of it. Kant takes those [cognitive] capacities as primary, and then deduces the a priori limits of nature” (ibid., 39; interpolation is mine).
The Categorical Imperative is grounded in Kant’s transcendental deduction where he argued for synthetic a priori truths, i.e., factual truths about the world-in-itself (as opposed to logical truths) that are nonetheless universally and necessarily true...
Kant’s primary examples of the synthetic a priori were mathematical statements. Mathematical statements seem to be directly applicable to the world, e.g., geometry, and also seem to be universal and necessary.
Empirical Problems with Kantian Ethics...
Kant’s ethical system is part of his greater philosophical system. However, many of the components of his critical philosophy have turned out to be false or difficult to interpret.
“Kant's standard of *a priori*, an expression of rationality, was challenged and relativized by the new notions of space and time in Einstein's relativity theories and the synthetic *a priori* was dismissed as empty of content in the new scientific landscape.

The *a priori* kind of knowledge claims expressed in exact knowledge was... voided of universality and necessity and deflated by Schlick and Reichenbach to the character of definitions and conventions” (Cat 2014, Section 3).
For example, he believed that space and time were not objective features of reality but “subjective condition[s] of sensibility,” (1787, Preface to *Critique of Pure Reason* (2e) p. xvi).

He believed that logic did not have to advance past Aristotle’s categorical logic, and his strongest examples of synthetic a priori judgments were the unquestioned truths of mathematics.
“In view of the role which mathematics plays in science and the implications of scientific knowledge for all of our beliefs, revolutionary changes in man’s understanding of the nature of mathematics could not but mean revolutionary changes in his understanding of science, doctrines of philosophy, religious and ethical beliefs, and, in fact, all intellectual disciplines...

The creation of non-Euclidean geometry affected scientific thought in two ways. First of all, the major facts of mathematics, i.e., the axioms and theorems about triangles, squares, circles, and other common figures, are used repeatedly in scientific work and had been for centuries accepted as truths—indeed, as the most accessible truths.

Since these facts could no longer be regarded as truths, all conclusions of science which depended upon strictly mathematical theorems also ceased to be truths...”
“...Secondly, the debacle in mathematics led scientists to question whether man could ever hope to find a true scientific theory. The Greek and Newtonian views put man in the role of one who merely uncovers the design already incorporated in nature. However, scientists have been obliged to recast their goals. They now believe that the mathematical laws they seek are merely approximate descriptions and, however accurate, no more than man’s way of understanding and viewing nature” (Kline 1967, 474-75).
Given, then, developments in physics, Riemann’s defense of non-Euclidean geometry (and subsequent shattering of the myth of the “absolute truth” of mathematics, see Kline 1967, ch. 20), and 19th century advances in Logic, these important aspects of Kant’s critical philosophy are untenable.
This may point to Philosophy’s relinquishment problem, the inability to give up the views of important thinkers. And yet, there is something intuitively true about the conjecture that moral maxims are supposed to be universalizable and accessible to everyone (via reason or some other faculty).
Giving credit where credit is due, however... Parts of Kant’s “transcendental deduction” are sorta true...
“Whenever we formulate a theory of the world that purports to be valid, not just from our own point of view but across an entire range of perspectives [i.e., symmetry], we are implicitly committing ourselves to a law of conservation [i.e., a law about the nature of the universe]” (Holt 2019, “Emmy Noether’s Beautiful Theorem”, see also Baez 2002).
Emmy Noether, 1882-1935