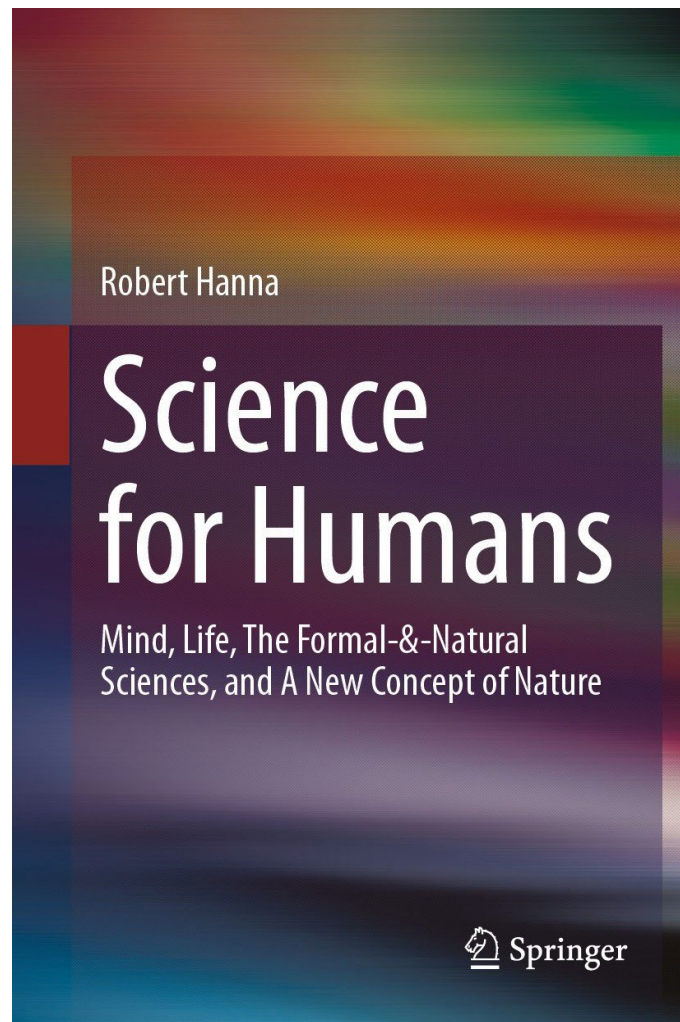


Why Read Science for Humans? 2: The Importance and Justification of The Explanatory Inversion Thesis

Robert Hanna



(Hanna, 2024a)

In *Science for Humans* (Hanna, 2024a), I presented and defended what I call *the neo-organicist turn*, which has two parts.

First, *manifest realism*, which says that the natural universe is, at least in principle, *directly accessible* to rational human pure or a priori intuition and human sense perception alike, precisely because the natural universe consists of a complete, unified, structuralist system of *objective veridical appearances*, such that anything X appears to be F (or G, or whatever) to us if and only if (i) X *really and truly* is F (or G, or whatever), and (ii) the fact

of X's being F (or G, or whatever) is, at least in principle, *intersubjectively directly accessible* to all actual or possible rational human minded animals, and *not* idiosyncratically restricted to any single rational human individual or to any particular rational human community/social institution or special set of such communities/social institutions.

And **second**, *organicism*, which says (i) that mental properties are at least as fundamental as physical properties in the natural universe, that they don't exclude each other in the same substances, and indeed that they're *necessarily complementary* in minded animals (liberal naturalism), (ii) that conscious mind and organismic life are metaphysically continuous with one another (mind-life continuity), and (iii) that instead of assuming that the world is fundamentally mechanical, so that manifestly real conscious mind, organismic life, negentropy, irreversible processes, and unidirectional or asymmetric time all explanatorily and metaphysically mysteriously *pop out of* fundamentally physical, non-living, computable, entropic, and reversible mechanical systems, only in order ultimately to *pop back into them* in the state of maximum entropy, we instead postulate the natural universe is *fundamentally organic* and therefore all formal and natural mechanical systems are metaphysically dependent on and derivable from uncomputable, negentropic, irreversible, processual, purposive, self-organizing, and time-unidirectional or time-asymmetric organic systems (explanatory inversion).

According to the explanatory inversion thesis, then, what is the explanatory and metaphysical or ontological function of mechanical systems? It's nothing more and nothing less than to provide a relatively fixed, rigid, and static *skeleton* for channelling, distributing, focusing, framing, and more generally supporting the essentially richer informational or representational and causal powers of organic systems, just as the relatively fixed, rigid, and static skeleton inside a living animal channels, distributes, focuses, frames, and more generally supports the essentially richer informational or representational and causal powers of the organism itself. And when formal or natural organic systems fully unfold, naturally die, or otherwise creatively realize themselves and achieve closure, then the skeletons of their embedded mechanical systems continue to exist, either in a state of computable, decidable, recursive, and yet creatively inert formal perfection or else in a state in a state of calcified or frozen thermodynamic energy dispersal and equilibrium, i.e., *heat-death*. Therefore, trying to explain or construct organic systems from mechanical systems is *like confusing living animals with their skeletons*. To be sure, paleontologists can learn a great deal about living animals from the genetic information stored in skeletons. But as someone who, as a university student, had a regular summer job working in a zoo, I can personally confirm that there's a world of difference between being in the same cage with a living lion, and being in the same cage with its skeleton, even though they share the same DNA.

In other words, the explanatory inversion thesis is the conceptual and theoretical *flip* of the modern-classical materialist or physicalist metaphysics and ontology of the mechanistic worldview, a flip according to which all mechanical systems whatsoever, whether formal or natural, are nothing but *systematic abstractions* from fundamentally organic systems, and not the other way around. Otherwise put, the explanatory inversion thesis says that all mechanical systems whatsoever are nothing but *degenerate cases, fragments, or limiting cases* within the fundamentally organic cosmos, and *do not* capture the fundamental informational or representational and causal structure of the cosmos.

By saying that all mechanical systems are “systematic abstractions” from fundamentally organic systems, I mean more specifically that all mechanical systems whatsoever are *either logically or naturally/nomologically strongly supervenient on* fundamentally organic systems.¹ In turn, the logical or natural/nomological strong supervenience of mechanical systems on fundamentally organic systems entails that all mechanical systems, in and of themselves, are informationally/representationally and causally *inert*, i.e., informationally/representationally and causally *epiphenomenal*, with *no rich informational/representational powers or efficacious causal powers of their own*, because all rich informational/representational content and causal efficacy in the cosmos ultimately derives from and is inherited from organic systems: hence all mechanical systems are *informational/representational and causal parasites* or *informational/representational and causal*

¹ For the record, strong supervenience (Kim, 1993: esp. part 1; Horgan, 1993; Chalmers, 1996: chs. 1-3) is a necessary determination-relation between sets of properties or states of different ontological “levels,” a relation that is weaker than strict property/state-identity, and is usually taken to be asymmetric, although two-way or bilateral supervenience is also possible. But assuming for the purposes of simpler exposition that strong supervenience is asymmetric, then, more precisely, *B*-properties/states (= the higher level properties/states) strongly supervene on *A*-properties/states (= the lower-level properties/states) if and only if (i) for any property/state *F* among the *A*-properties/states had by something *X*, *F* necessitates *X*'s also having property/state *G* among the *B*-properties/states (upwards necessitation), and (ii) there cannot be a change in any of *X*'s *B*-properties/states without a corresponding change in *X*'s *A*-properties/states (necessary co-variation). It follows from strong supervenience that any two things *X* and *Y* share all their *A*-properties/states in common only if they share all their *B*-properties/states in common (indiscriminability). In turn, *logical* strong supervenience is a super-strong version of strong supervenience which says that the necessitation relations between the *B*-properties/states and the *A*-properties/states are *logical* and *a priori*. Or more simply put: The *B*-properties/states are “nothing more than” and “nothing over and above” the *A*-properties/states. If logical strong supervenience holds, then if there were such a being as an all-powerful and all-knowing creator God, and if They were to create and/or know all the *A*-properties/states, then They would have nothing more to do in order to create and/or know all the *B*-properties/states. By contrast to logical strong supervenience, *natural* or *nomological* strong supervenience is a modally weaker notion which says that the necessitation relations between the *B*-properties/states and the *A*-properties/states are determined by laws of nature, and hold in all and only the worlds in which those natural laws obtain.

shadows of fundamentally organic systems (see Hanna, 2024a: ch. 14). Correspondingly, all authentic knowledge (i.e., true and sufficiently justified belief) about mechanical systems consists in our (i) insightfully grasping the only-denumerable, recursive, entropic, deterministic/indeterministic, time-reversible or time-symmetric, equilibrium thermodynamic, and informationally/representationally-&-causally parasitic character of such systems, and their inherent limits, and then (ii) systematically embedding them within the essentially richer domains of organic systems. If the explanatory inversion thesis is true, then proponents of materialism or physicalism and the mechanistic worldview have committed what Whitehead aptly called *the fallacy of misplaced concreteness*: mistaking the abstract for the concrete (Whitehead, 1927/1967: p. 51), as if you could somehow explain or construct *living animals* by presenting their *skeletons*. Since proponents of materialism or physicalism and the mechanistic worldview start their theorizing with systematically abstracted, logically or naturally/nomologically strongly supervenient *abstracts* or *bare bones* of essentially richer formal or cosmological systems, and *mistakenly take those abstracts or bare bones to be concrete and fundamental*, then they've flagrantly committed the fallacy of misplaced concreteness.

But, to be more explicit and specific here, what justifies the explanatory inversion thesis?

First, given the centuries-long failure to explain the organic in terms of the mechanical—especially organismic life and consciousness in terms of fundamentally non-living, non-mental, mechanical facts and processes, and to explain intelligent thinking in terms of computability—it makes supremely good philosophical and scientific sense to flip the direction of explanation, thereby substituting *the neo-organicist worldview* for *the mechanistic worldview* (Hanna and Paans, 2020; Torday, Miller Jr, and Hanna, 2020).

Second, metaphysically and ontologically grounding that which has sparse, rigid structure in that which has rich, flexible structure, by way of systematically abstracting the former from the latter, also makes supremely good sense, as an elegant, non-reductive version of logical or natural supervenience.

Third, explanatory inversion solves the problems of the incompleteness of logic and physics (Hanna, 2024a: chs. 4-7).

Fourth, explanatory inversion explains the nested hierarchy of formal-logical systems (Hanna, 2024a: ch. 8).

Fifth, explanatory inversion solves “Skolem’s paradox”(Hanna, 2024a: ch. 9).

Sixth, explanatory inversion solves Zeno's paradox of motion (Hanna, 2024a: ch. 10).

Seventh and finally, explanatory inversion solves fundamental problems in the foundations of set theory, including providing a new demonstration of Cantor's Continuum Hypothesis (Hanna, 2024a: ch. 11)

Therefore, even apart from its ability to explain what mechanistic theories have never been able to explain, and even apart from its metaphysical and ontological elegance, the explanatory inversion thesis is principally justified by its ability to solve several outstanding and seemingly insoluble problems in philosophy, formal science, and natural science. In short, the explanatory inversion thesis is a highly important, original, and well-justified thesis in philosophy, formal science, and natural science.

In another essay, I've provided a set of good reasons for reading *Science for Humans* and for taking it seriously. The gravamen of that essay is this:

Science for Humans is clearly and distinctly an investigation in what Joel Katzav and Krist Vaesen aptly call *speculative and value-laden philosophy of science*, which, as they've persuasively argued, was systematically marginalized by post-classical Analytic philosophers of science and also by many formal and natural scientists heavily influenced by them, in the mechanistic, scientific tradition of the exiled Vienna Circle logical empiricists/positivists, during the 1950s ... —and, in fact, also through the end of the 20th century and the first two decades of the 21st century, right up to 6am this morning.

So, in effect, precisely the kind of speculative and value-laden philosophy of science that I've presented and defended in this book ... is *streng verboten* (i.e., "strictly forbidden") and highly apt to be strangled in its intellectual cradle, by the undead social-institutional dead hand of the Vienna Circle.

If these unorthodox and "untimely" ideas and lines of reasoning are wrong, then at the very least they're *interestingly* and *greatly* wrong, and might inspire someone else to do truly original, paradigm-shifting work. Hence there should be a legitimate place for them in contemporary philosophical and scientific space.

But if I'm right and Vienna-Circle-heavily-influenced, post-positivist, mechanistic, scientific philosophy of science is wrong, then in the near future there will be an *Überwindung* (i.e., an "overcoming," just as the Vienna Circle proposed to overcome metaphysics) of precisely this kind of philosophically and scientifically repressive and retrograde dogmatism in the philosophy of science and in the formal and natural sciences alike, and above all, a new Kuhnian paradigm shift ... the paradigm shift to end all Kuhnian paradigm shifts, the mother of all Kuhnian paradigm shifts, The Big Kahuna of

all Kuhnian paradigm shifts, and the alpha-&-omega of all Kuhnian paradigm shifts: namely, the not only figuratively earthshaking but also quite literally cosmos-stretching neo-organicist revolution. When formal and natural science finally become science for humans, that progressive revolutionary longjump will not only figuratively but also quite literally change the world. (Hanna, 2024b: pp. 5-6)

Nevertheless, as far as I can tell, although *Science for Humans* has been available for at least two years, no one is reading it or indeed paying any attention whatsoever to it. So, just like David Hume's *Treatise of Human Nature* (Hume, 1739/1978), *Science for Humans* "fell dead-born from the press, without reaching such distinction, as even to excite a murmur among the zealots" (Hume, 1776/2022: p. 6).

But on the other hand, (i) if the mechanistic worldview is as deeply embedded in the thought-shaped thinking of philosophers and scientists as I claim it is (Hanna and Paans, 2020), and (ii) if philosophy and science inside the professional academy are as ideologically-blinkered by "mind-for'd manacles" (Blake, 1794: lines 5-8) as I've claimed that they are, then that's not terribly surprising. Or as Kurt Vonnegut would say: "And so it goes." That being so, however, one can at least wholeheartedly hope that the neo-organicist turn and the explanatory inversion thesis will covertly work their ways into the theories and thinking of future philosophers and scientists, who will then adopt and disseminate them as if they had discovered them themselves.²

² I'm grateful to Scott Heftler for many thought-provoking conversations on and around the main topics of this essay.

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