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From Transcendental Dopes to Transhumanists: Prolegomena to a Futurist Take on the History and Philosophy of Science

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It is now fashionable to condemn our species' exalted self-regard for precipitating that apocalypse in waiting known as the 'Anthropocene'. Nevertheless, I shall heretically argue that we really know more than we normally think we do. But I don't mean what Michael Polanyi famously called 'tacit knowledge', the context-based type of knowing that cannot be reduced to verbal or mathematical formulas. On the contrary, I mean the sort of knowledge that is generated from the production of verbal and mathematical formulas. They lay down the cognitive infrastructure that enables us to take advantage of opportunities, should they arise in our experience. The result is a state of mental preparedness that theologians have associated with faith and hope—but which modern philosophy's founding figure, Immanuel Kant, reduced to precarious 'anticipations of perception'. And under Kant's profound influence, we have been rendered 'transcendental dopes'. What follows is my attempt to wake us from our Kantian slumbers—specifically, with an eye to transhumanism, a movement whose heart in science fiction reveals a willingness to blur the boundary between imagination and experience in a way that Kant held should never be crossed.



Many years ago I criticized a sociologist for whom I have the utmost respect because he thought about things in the style of Max Weber without considering what Weber would make of our current predicament. My esteemed colleague sounded more like a Weber tribute act than someone truly inspired by Weber. In the back of my mind was that Weber—one of the iconic founders of modern sociology—might not be such a welcomed voice in our own times, *à la* the second coming of Jesus in the 'Grand Inquisitor' episode of Dostoevsky's *Brothers Karamazov*. Although in retrospect I was too harsh about my colleague, the conceptual point stands. It boils down to this: People in general—not only Weber—are not *transcendental dopes*.

A 'transcendental dope' is someone who has no sensible opinion about things that lie beyond his or her own experience. I coined the phrase in opposition to the 'politically correct' tendency among a wide swathe of practitioners of the 'human sciences'—it may even be dogma within history—to deny historical agents the right to speak authoritatively about anything other than that which happened in their lifetimes, and preferably within only one or two degrees of separation from the events themselves.¹ The euphemism associated with this tendency is 'contextualism', a coinage of the Cambridge intellectual historian Quentin Skinner. I regard contextualism as an overreaction to what another Cambridge intellectual historian, Herbert Butterfield earlier dubbed the 'Whig Interpretation of History', namely, history as told from the standpoint of those on the winning side of its defining struggles. In Whig histories, figures from the past are presented as having somehow foreseen today's 'success', notwithstanding the twists and turns along the way. Official histories of academic disciplines and nation-states often have this character.

¹ *Knowledge: The Philosophical Quest in History* (London: Routledge, 2015), 259.

The self-congratulatory nature of such narratives is clearly abhorrent to the contextualist. The moral source of this abhorrence requires another article, but the interests of professional historians are clearly at play. Treating past figures as transcendental dopes is a convenient strategy for those who want to keep their subjects forever preserved in the amber of the archives. In that case, historical agents must always be referring to something for which some document already exists. Nevertheless, most of what people think and talk about extends way beyond their ‘experience’, even including what they’ve been taught and heard from others—and sometimes by quite a long way. This is something that language enables with its capacity for ‘displaced reference’. Indeed, this feature of language makes all of us—regardless of educational achievement—always already quite ‘intellectual’. Moreover, one might reasonably suppose that people would want their words to retain this intellectuality even in death. Contrary to contextualist dogma, we should presume that the deceased are addressing us today *at least as much* as they addressed their contemporaries. And so, we should take seriously the idea that the words of a scientist, politician, entrepreneur or, for that matter, a poet might refer to something that only future generations will fully understand. As will become clear, this is really not about Nostradamus-style prophecies.

Of course, it is common to credit or blame past figures for what they get right or wrong about things far away in space and time. Moreover, founding ‘geniuses’ loom large in the thinking of most fields as having anticipated the general contours of all that followed, albeit without providing entirely secure guidance along the way. I don’t just mean Kuhnian paradigms in science, but the law specifically has always had a strong tradition of judges and scholars imagining what the ‘founding fathers’—from Moses to Madison—would make of the current state of play as a kind of proxy test of their guiding principles. But on all these matters, the contextualists demur. For them, it’s not enough to see that something would eventually be realized; it needs to have happened by what turns out to have been the right historical path.

But if we set the bar that high, then what normally passes for ‘scientific laws’ would dissolve before our eyes. (And so begins the argument of Nancy Cartwright’s classic *How the Laws of Physics Lie*.) The marvellous thing about scientific laws is not that they capture everything that has been observed in a given domain; rather, it is that they predict what would be observed were that domain extended. Indeed, the scope of such laws extends beyond anything any single member of *Homo sapiens* could ever observe. This is why Isaac Newton and the other seventeenth century figures behind the first scientific laws had no trouble assuming that God was their author. And whatever their views about God, transhumanists should take comfort in Newton’s faith. Newton didn’t predict the space programme of the 1960s but it vindicated many of his riskiest predictions. And a resurrected Newton would no doubt explain his vindication in terms of the human mind’s participation in the divine mind. I shall return to this point in the final section, since Newton may have a point.

To see the issue in more secular terms, imagine that someone claims that under conditions X, Y will happen across a vast domain, most of which has been unexplored. That is pretty much what a scientific law asserts. We normally believe such statements because the claim has passed muster in the small part of the domain where it has been tested. And because

we're talking about 'science', the aspiration is universal and so probes continue into parts of the domain where we might have reason to doubt that the claim holds. Now suppose that these probes continue for many years, long after the original claimant has died—and the claim passes the corresponding tests. Suppose additionally that the evidence obtained in these tests is through instruments that the original claimant could not have operated or perhaps even imagined.

What I have just described is a relatively uncontroversial account of the modern scientific method, according to which the claim would be normally given a clean bill of health—that is, pending still further probes. What is striking about this account is its principled indifference to the conditions under which 'If X then Y' was tested in each case. Newton got credit for his laws—for as long as he did—without having to know or even guess the circumstances of their testing. This is the sort of thing that our contextualist will not permit, as it would grant Newton knowledge of things that transcend his experience in not one but two senses: Newton possessed neither first-order knowledge of the events that his laws predicted nor second-order knowledge of the historical conditions that secured those events. While the contextualist is of course technically correct in all this, Newton remains the greatest scientist who ever lived. Is this judgement some colossal folly?



The main reason to resurrect the transcendental standpoint is not to keep great scientists like Newton standing on their pedestals, let alone on the shoulders of other such 'giants'. Rather, it is to draw attention to the remarkable faith and effort that modern humans have successfully invested in trying to realize their 'clear and distinct' ideas in the face of uncertainty. From risky overseas ventures to risky laboratory experiments to risky outer space voyages, *Homo modernus* has trusted intellectual intuition over concrete experience to beat the odds. It has even sometimes seemed as if a version of what economists call 'Say's Law'—that supply creates its own demand—operates in the world of ideas: Any idea we have seems to create a demand for its realization. Thus, we might think of the realization of, say, Newton's laws as the extension of Newton's mind over space and time. However, the learned prejudice represented by contextualism, which treats humans as transcendental dopes, is inclined to regard these achievements as at best lucky breaks and at worst instances of irrational behaviour. And the ultimate source of that prejudice is Immanuel Kant.

But before turning to the shadow that Kant casts over this discussion, let me suggest that Say's Law, while suggestive, may not quite capture how our ideas relate to reality. Much depends on how one thinks about the source of our ideas. We shall shortly see that the 'rationalist' tradition that Kant side-lined held that 'our' ideas are really pale versions of God's ideas, which we are obliged to bring to fruition to recover from our Biblically 'fallen' status. Ordinary philosophy students today encounter a secular remnant of this perspective in the peculiar custom of calling the truths of language and mathematics '*a priori*', which suggests that in some sense we are born already knowing them. Noam Chomsky is probably the most potent latter-day exponent of this view. However, as we shall later see, in the spirit

of ‘post-truth’, we might also see the rationalist sensibility as opening the door to the ‘gamification’ of reality, of which transhumanism is the natural heir.



What makes Immanuel Kant the greatest modern philosopher is not that we agree with everything he said. On the contrary, as time goes on, the disagreements accumulate over both his abstract and concrete propositions. Nevertheless, we still accept Kant’s frame of reference—and that matters. It means that we continue to inhabit Kant’s self-understanding of what he was trying to do. We continue to play his game. That is an amazing and enviable feat from a world-historic standpoint, the measure of which Richard Rorty began to get in his 1979 work, *Philosophy and the Mirror of Nature*.

To be sure, the fame and influence of many intellectual figures exceed their lives but rarely because their latter-day admirers have approached matters in the way they did. Generally speaking, our appreciation of the great minds is more in the spirit of soundbites than we realize. We continue to value, say, Plato, Aristotle and Hegel, but very probably *not* because we share their frame of reference. Kant is different, and I believe that the world will not be safe for transhumanism unless we drop Kant’s frame of reference. So what is this ‘frame of reference’ that we take for granted?

We basically take Kant at his word in the *Critique of Pure Reason* that he is philosophy’s answer to Copernicus. Kant’s ‘Copernican Revolution’ consisted of two countervailing moves, which invite radical reorientation in today’s world. Kant’s first move was to make the human subject the locus of knowledge, his second was to regard the human as inherently bounded, with the ‘external world’ standing beyond the human subject as an opaque ‘thing in itself’. Thus, Kant would have no truck with the core transhumanist idea of ‘morphological freedom’ or its philosophically domesticated variant, the ‘extended mind’. Both of these positions see the nature of matter as functional, whereas Kant ultimately saw matter as an opponent to spirit, an impediment to its free motion.

More specifically, for Kant the human body is a noise-filled and irredeemably limited medium for accessing the larger reality in which it is embedded. Given Kant’s own pietistic Christian upbringing, this radical separateness from reality is best read as a secularisation of the Biblical fall. The result is the foundational problem of modern epistemology, what Bertrand Russell dubbed, ‘The Problem of the External World’. Whereas in religious times, a postlapsarian humanity encountered God as radically ‘other’ to itself, in secular times a post-critical humanity encounters the world created by ‘God knows who’ as radically ‘other’. Indeed, the depth of our ignorance extends beyond how things are in themselves to how our fellow persons are in themselves. Russell popularised this latter quandary as ‘The Problem of Other Minds’.

Yet, despite Kant’s profound sense of humanity’s alienated condition, he also concedes that ‘reason’ primes us to presume that things happen in an orderly and even meaningful fashion and that our fellows do indeed possess souls. Nevertheless, in the end, the slim epistemic

lifeline to a world beyond ourselves remains sensory perception. Even our most abstract frame of reference—the space-time matrix itself—is no more than a hopeful extension of our sensory capacities.

Interestingly, in this respect Kant was not being especially sceptical or nihilistic. The Enlightenment generally saw mathematics as an adjunct to physics and engineering—very much in the spirit of Euclid, whose geometry drew on physical intuitions in the construction of proofs. Indeed, the mathematicians who adhered most closely to Kant in the nineteenth and twentieth centuries insisted that their field remain grounded in Euclid’s world, which was invariably described as ‘natural’. The names of Kronecker, Husserl, Brouwer—and the later Wittgenstein—stand out as Kant’s standard-bearers. They suspected if not outright dismissed the reality of such innovations as irrational numbers, non-Euclidean geometries and infinite sets.

Yet, those supposed monstrosities of the mathematical imagination turned out to power the twentieth century’s radical expansion of our understanding of the cosmos. Prior to their empirical confirmation, these ideas provided a ‘safe space’ to talk about possible worlds other than the one which we ordinarily think we inhabit. They invited a change in the frame of reference by which we understand reality, which then inspired efforts at concrete demonstration. All of this suggests that—*contra* Kant—perception is *not* the privileged portal through which the intellect is informed. Rather, the intellect enjoys its own independent albeit fallible access to the truth.

So it seems that humanity’s fallen status is not quite as fallen as Kant supposed. We are not quite so ‘other’ from God. How is that possible? Perhaps because the *only* sense in which we are separated from God is by virtue of possessing the bodies that we do. This line of thought is the calling card of the ‘rationalist’ tradition of Descartes, Malebranche and Leibniz. Moreover, when today’s philosophers and cognitive scientists presume that we know *both* the nature of rationality and our limited capacity to realize it, they are operating within the ‘rationalist’ tradition in this sense. From this impulse, one starts to think of ways to overcome those limitations, which may involve personal physical enhancements or the creation of artificial agents who do not suffer from our natural infirmities. One can easily see this line of thought paving the way to transhumanism, with Norbert Wiener operating as a key ‘sherpa’ figure.

Nevertheless, Kant, who himself began life as a rationalist, subverted the tradition from within by portraying it as naively overconfident. Consider the signature argument of modern rationalism, which culminates in Descartes’ ‘I think therefore I am’. We tend to read Descartes through Kant, for whom Descartes appears to be wanting us to trust reality is as it appears because God would never allow us to live in a world that resembles the *Matrix*. Not surprisingly, commentators have found this rendering of the Cartesian argument wanting if not naïve. But that’s probably not how Descartes understood his argument. Rather, he traded on a presumed overlap between the divine and the human mind, whereby thinking is regarded as inherently performative: In both cases, it brings things into being. Just as Creation is the explicit outworking of God’s will (*logos* in the Gospel of John), a ‘life’ is the

outworking of each person's will. (This idea remains in the legal use of 'will' in 'last will and testament'.) God creates to prove himself to himself, and so do we. The difference, of course, is that God gets it right the first time, whereas we continue to fail even after successive attempts.

If we assume this take on Descartes' argument, then the road from Enlightenment rationalism to revolutionary Romanticism is effectively paved. Basically, the modern era becomes the history of freedom of thought morphing into freedom of action—again assuming fallibility throughout. The inevitable clash of wills generates alternative ways of organizing humanity's 'sovereign will', understood as the secular version of the divine will presumed in natural law theory. To cut a two century story short, capitalism and socialism became the alternative expressions of the sovereign will democratised. The intellectual historian Jerome Schneewind artfully described this development as the 'devolution of the divine corporation'.

Descartes' most sophisticated immediate follower, Nicolas Malebranche, dubbed the overlap between the human and divine minds—however partial and fallible—as our 'vision in God'. It permits us to make judgements that may be technically wrong yet 'fit for purpose' insofar as they get us to the next decision point. The term of art historically used for this divinely inspired semi-capacity of ours is *intuition*, though organizational theorist and AI pioneer Herbert Simon preferred the ugly word 'satisficing', which Gerd Gigerenzer subsequently updated for the evolutionary psychology generation as 'fast and frugal heuristics'. On this view, *contra* Kant, our 'lifeline' to reality is not the steadfastness of our senses to receive and process but the sharpness of our intellect to capture and pivot.

Intuition continues to enjoy a privileged albeit somewhat mysterious standing in a variety of modern disciplines. Running throughout discussions of intuition is the need for it to be followed up by 'proof'—that is, by a set of instructions that gets those lacking in the original intuition to see what has been intuited. Mathematicians have long regarded proof procedures as the 'technology of thought', originally a metaphor but now rendered literal with the all-pervasive presence of algorithms in computer-based systems. However, in between intuition and proof is *hypothesis*, a kind of controlled intuition in which experimentation functions as a proxy for proof. It is, of course, the cornerstone of the scientific method.

As the scientific method's great theorists from Bacon to Popper have realized, experiments leverage our cognitive limitations into a higher form of cognitive awareness. They enable us to achieve a higher state of consciousness precisely by making it as hard as possible to confirm our most considered ideas. In effect, they push us to the limit of our understanding in the hope that we might transcend those limits. This is something that the great psychologist of 'self-actualization', Abraham Maslow, would have recognized as 'peak experiences'. Interestingly, it turns out that in 1966 Maslow published the first book entitled 'The Psychology of Science'. Much of the book is devoted to teasing out the spiritual side of scientific inquiry, its capacity for self-transcendence. Influenced by Polanyi and Kuhn, though not necessarily as they would have intended, Maslow believed that science at its best is about realizing a world-view in its totality, notwithstanding the obstacles placed in its way.

This is a vision of science well suited for the transhumanist imagination—and it requires a rejection of Kant and a return to rationalism.